ORDER NO. HAD8804125C8

Service Manual

Cassette Deck

RS-X950

Dolby B • NR-Equipped
Stereo Double Cassette Deck

* DOLBY B·C NR

Color

(K)...Black Type

Area

Color	Area
(K)	(E).....Continental Europe.
(K)	(EK).....United Kingdom.
(K)	(EH).....Holland.
(K)	(EG).....F.R. Germany.
(K)	(XA).....Asia, Latin America, Middle Near East, Africa and Oceania.
(K)	(XL).....Australia.
(K)	(XB).....Saudi Arabia.

SPECIFICATIONS

■ CASSETTE DECK SECTION

Deck system Stereo cassette deck
Track system 4-track, 2-channel
Heads
(DECK A) REC/PLAY Solid Permalloy head
Erasing Double-gap ferrite head
(DECK B) PLAY Solid Permalloy head
Motors
(DECK A) Capstan/reel table drive
2 speed electronically controlled DC motor
(DECK B) Capstan/reel table drive
2 speed electronically controlled DC motor
Recording system AC bias
Bias frequency 80kHz
Erasing system AC erase
Tape speed 4.8cm/sec. (1-7/8ips)
Frequency response (w/o Dolby N.R.)
METAL 30Hz~18kHz
40Hz~17kHz (DIN)
CrO_2 30Hz~17kHz
40Hz~16kHz (DIN)
NORMAL 30Hz~16kHz
40Hz~15kHz (DIN)
S/N (signal level= max recording level, CrO_2 type tape)
DOLBY C NR on 74dB (CCIR)
DOLBY B NR on 66dB (CCIR)
NR off 56dB (A weighted)
Wow and flutter 0.08% (WRMS)
±0.2% (DIN)
Fast Forward and Rewind Time
Approx. 110 seconds with C-60 cassette tape
Input sensitivity and impedance
LINE 85mV/70kΩ
Output voltage and impedance
LINE 400mV/1.5kΩ

■ GENERAL

Power consumption 20W
Dimensions (W × H × D) 360 × 128 × 285mm
(14-3/16" × 5-1/32" × 11-7/32")
Weight 4.4kg (9.7lb.)

Note:
Specifications are subject to change without notice.
Weight and dimensions are approximate.

* Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"Dolby" and the double-D symbol are trade marks of Dolby Laboratories Licensing Corporation.

Technics

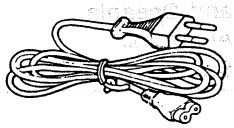
Matsushita Electric Industrial Co., Ltd.
Central P.O. Box 288, Osaka 530-91, Japan

■ CONTENTS

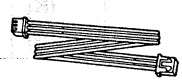
	Page
• Accessories	2
• How to connect	3, 4
• Location of controls	5, 6
• Disassembly Instructions	7~9
• Information on Power Supply Jig	10
• Measurement and Adjustment Methodes	11~13
• Microcomputer Terminal Function	14~16
• Description of FL Panel	17
• Resistors & Capacitors	18~20
• Terminal Guide of IC's Transistors and Diodes	20
• Replacement Parts List (Electrical, Packing, and Accessory parts)	21, 22
• Replacement Parts List (Cabinet Parts)	23
• Cabinet Parts Location	24, 25
• Block Diagram	26, 27
• Wiring Connection Diagram	28
• Printed Circuit Boards	29~32
• Schematic Diagram	33~40
• Mechanism Parts Location	41~44
• Replacement Parts List (Mechanical Parts)	45, 46

■ ACCESSORIES

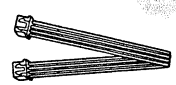
- AC power supply cord 1
  SFDAC05E03.. (EG only)



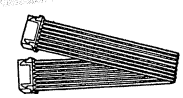
- 3-core flat cable..... 1
  (QLGM0488) .. (Except EG)



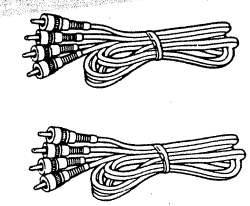
- 4-core flat cable.... 1
  (QLGM0517-1)



- 8-core flat cable.... 1
  (QLGM0487)



- Stereo connection cables... 2
  (SJPK22021)

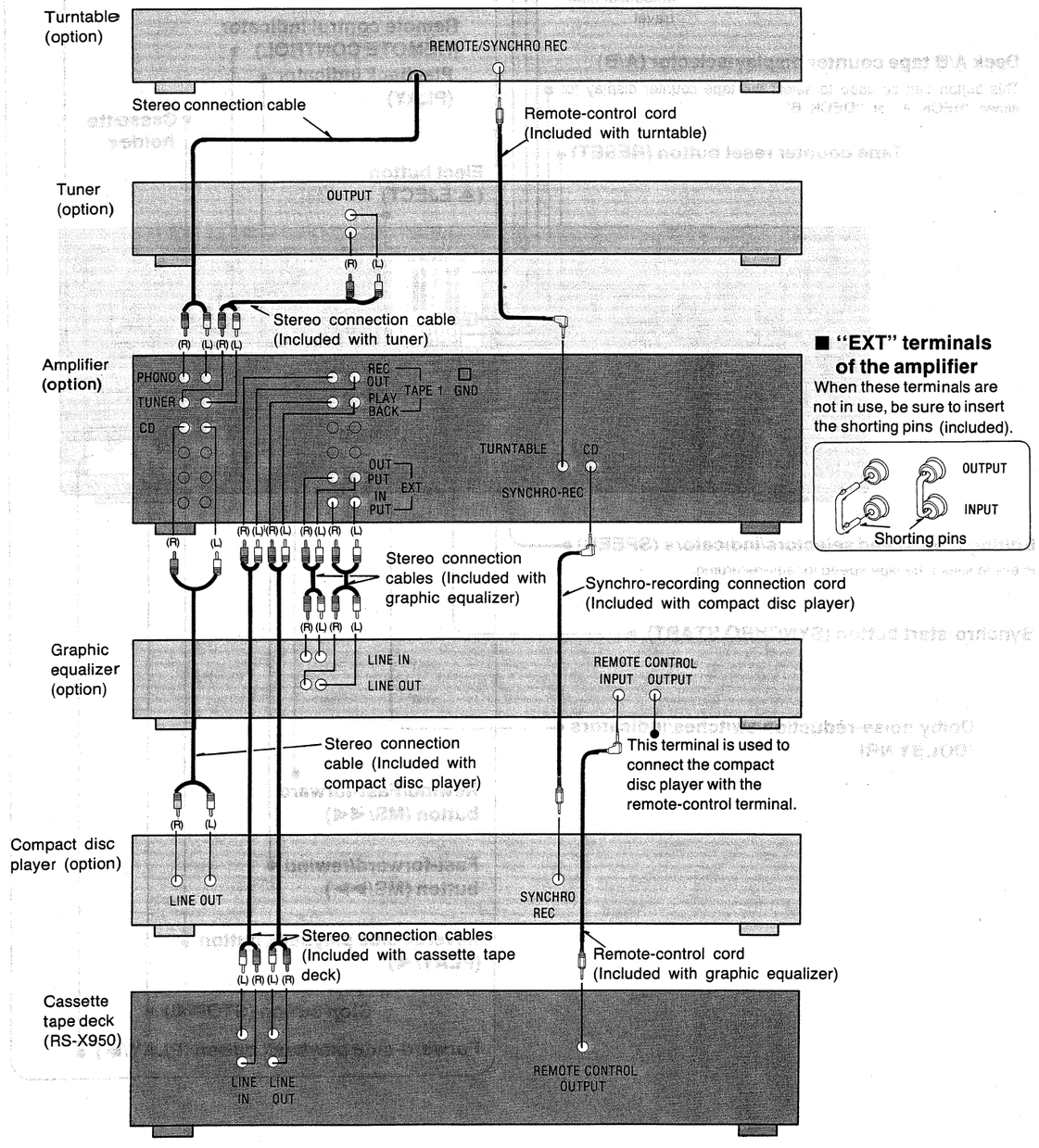


Note:
The configuration of AC power supply cord differs according to area.

■ HOW TO CONNECT

1. Make the connections of the stereo connection cables, the synchro-recording connection cord (option), and the remote-control cords (option).

1. Although the synchro-recording connection cord and the remote-control cords are differentiated in the figure below, actually they are the same shape.
2. For a turntable with a ground terminal, be sure to connect wire to the "GND" terminal of the amplifier.



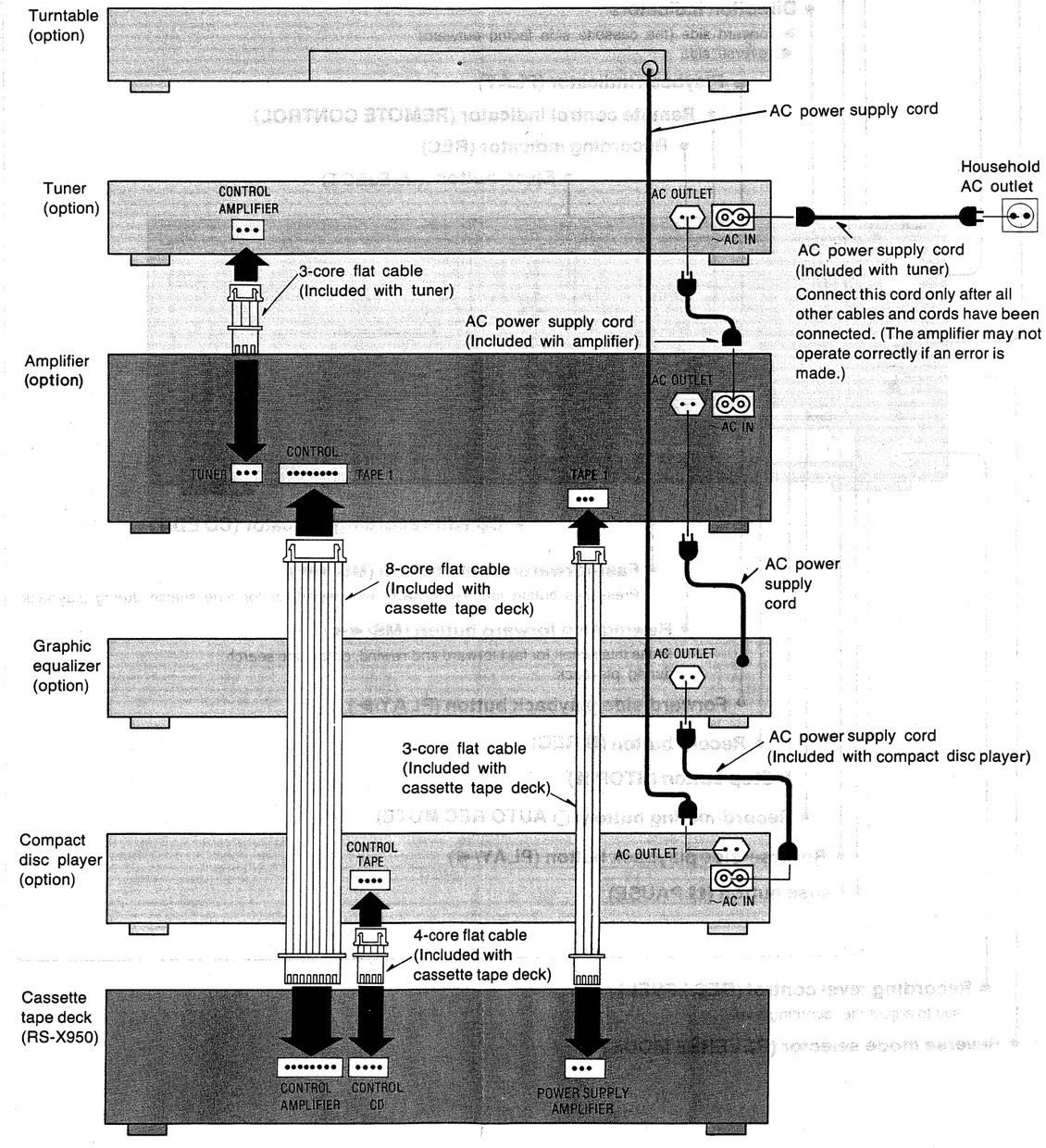
■ "EXT" terminals of the amplifier

When these terminals are not in use, be sure to insert the shorting pins (included).

2. Make the connections of the flat cables and the AC power supply cords.

1. Do not connect video-related equipment (such as a TV, etc.) to the AC outlets of these components. (These outlets are especially for audio equipment.) Also do not exceed the indicated power ratings when connecting to these outlets.
2. If the graphic equalizer is not used in combination with these components, connect the AC power supply cord of the compact disc player to the AC outlet of the amplifier. If the compact disc player is not used in combination with these components, connect the AC power supply cord of the turntable to the AC outlet of the graphic equalizer.

Note: The configuration of the AC outlet and AC power supply cord differs according to area.


Turntable (option)
AC power supply cord
Household AC outlet
Tuner (option)
CONTROL AMPLIFIER
AC OUTLET
~AC IN
AC power supply cord (Included with tuner)
Connect this cord only after all other cables and cords have been connected. (The amplifier may not operate correctly if an error is made.)
3-core flat cable (Included with tuner)
AC power supply cord (Included wih amplifier)
Amplifier (option)
CONTROL
TUNER
TAPE 1
AC OUTLET
AC IN
8-core flat cable (Included with cassette tape deck)
AC power supply cord
Graphic equalizer (option)
AC OUTLET
3-core flat cable (Included with cassette tape deck)
AC power supply cord (Included with compact disc player)
Compact disc player (option)
CONTROL TAPE
AC OUTLET
~AC IN
4-core flat cable (Included with cassette tape deck)
Cassette tape deck (RS-X950)
CONTROL AMPLIFIER
CONTROL CD
POWER SUPPLY AMPLIFIER

■ LOCATION OF CONTROLS

Timer stand-by switch (◷ TIMER)
This switch is to be used in order to perform a timer recording or timer playback operation.

Power switch (POWER)

When using "DECK A"

Cassette holder

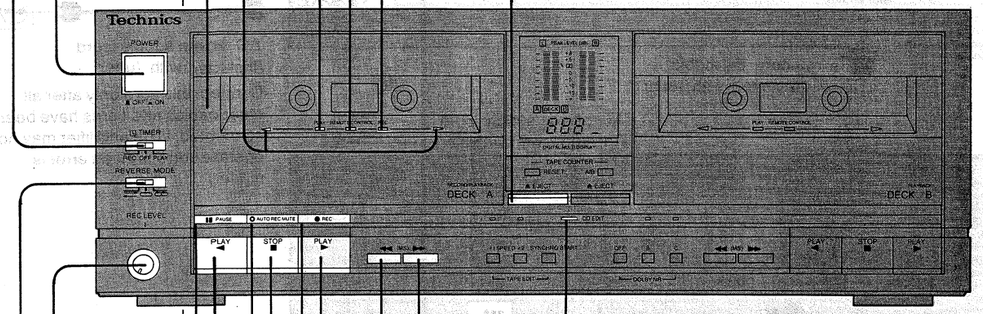
Direction indicators
▶: forward side (the cassette side facing outward)
◀: reverse side

Playback indicator (PLAY)

Remote control indicator (REMOTE CONTROL)

Recording indicator (REC)

Eject button (▲ EJECT)



CD edit-recording indicator (CD EDIT)

Fast-forward/rewind button (MS/▶▶)
Press this button for fast forward and rewind, or for tune search during playback.

Rewind/fast forward button (MS/◀◀)
Press this button for fast forward and rewind, or for tune search during playback.

Forward-side playback button (PLAY/▶)

Record button (● REC)

Stop button (STOP/■)

Record-muting button (▢ AUTO REC MUTE)

Reverse-side playback button (PLAY/◀)

Pause button (❚❚ PAUSE)

Recording level control (REC LEVEL)
Used to adjust the recording level.

Reverse mode selector (REVERSE MODE)

Level meters (PEAK LEVEL)
During recording, these meters indicate the recording level. The level is adjusted by using the recording level control. During playback, they indicate the level of the recorded sound.

Deck A/B tape counter indicators (A DECK B)

Tape counter
This indicates the amount of tape travel.

Deck A/B tape counter display-selector (A/B)
This button can be used to select the tape counter display for either "DECK A" or "DECK B".

Tape counter reset button (RESET)

When using "DECK B"

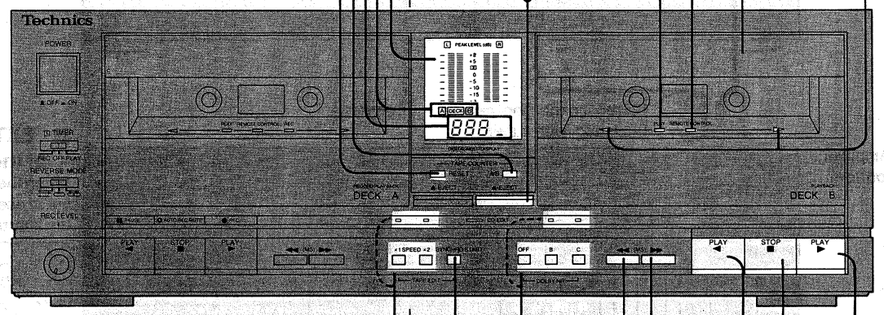
Direction indicators

Remote control indicator (REMOTE CONTROL)

Playback indicator (PLAY)

Cassette holder

Eject button (▲ EJECT)



Editing tape-speed selectors/indicators (SPEED)
Press to select the tape speed for edit-recording.

Synchro-start button (SYNCHRO START)

Dolby noise-reduction switches/indicators (DOLBY NR)

Rewind/Fast-forward button (MS/◀◀)

Fast-forward/rewind button (MS/▶▶)

Reverse side playback button (PLAY/◀)

Stop button (STOP/■)

Forward-side playback button (PLAY/▶)

■ DISASSEMBLY INSTRUCTIONS

"ATTENTION SERVICER"
Some chassis components may have sharp edges. Be careful when disassembling and servicing.

Ref. No. 1	How to remove the Cabinet.
Procedure 1	• Remove the 6 screws (❶~❻).

1. Remove the 6 screws (❶~❻), and then remove the Cabinet.

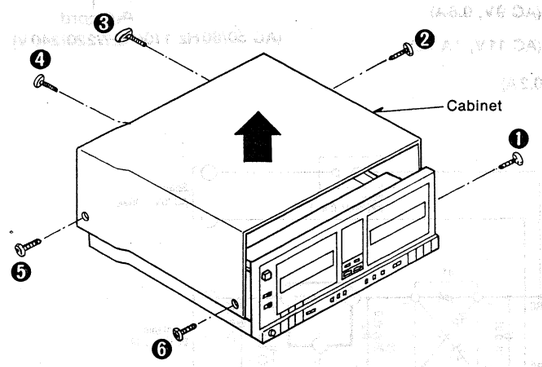


Fig. 1

Ref. No. 2	How to remove the Main P.C.B.
Procedure 1→2	

1. Remove the 14 screws (❶~⓮).
2. Remove the Rear panel in the direction of arrow, and then remove the Main P.C.B.

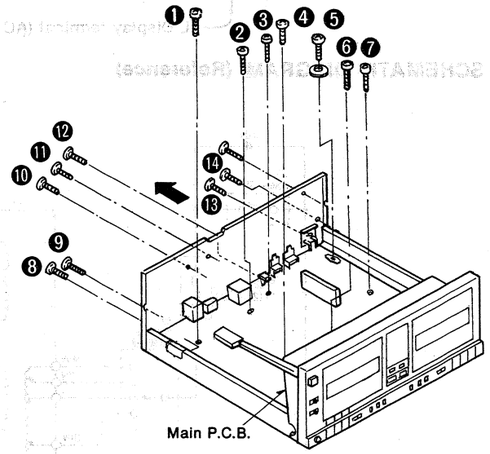


Fig. 2

How to check the Main P.C.B.

• When checking the soldered surfaces of Main P.C.B. and replacing the parts, do as show.

1. Remove the 10 screws (❶~❽, ⓬, ⓮), and then remove the Main P.C.B. (See Fig. 2)
2. Remove the 7 screws (⓯~㉑), and then remove the Bottom board. (See Fig. 3)

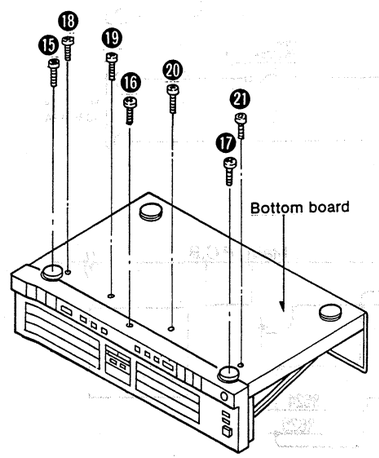


Fig. 3

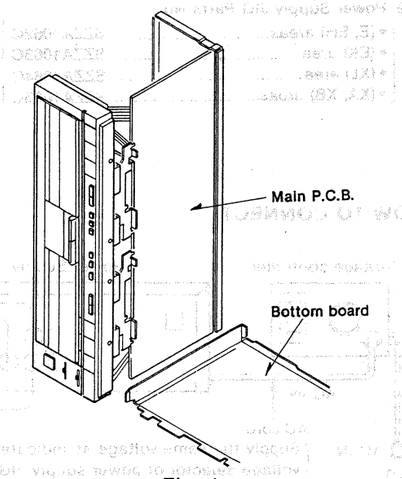


Fig. 4

Ref. No. 3	How to remove the Front panel ass'y.
Procedure 1→3	

1. Remove the 7 screws (❶~❼), and then remove the Front panel ass'y.

Note: If the mechanism stops in play state while the tape is running, the head PCB is lifted and stuck, and the cassette lid will not open if the eject button is pressed. In such a case, turn the main gear by head, or apply a DC 12V power directly to capstan motor ⊕ and ⊖ terminals from the power supply jig (SZZA1047F). Then the head PCB is lowered, and the mechanism comes into stop state, so that eject operation is enabled.

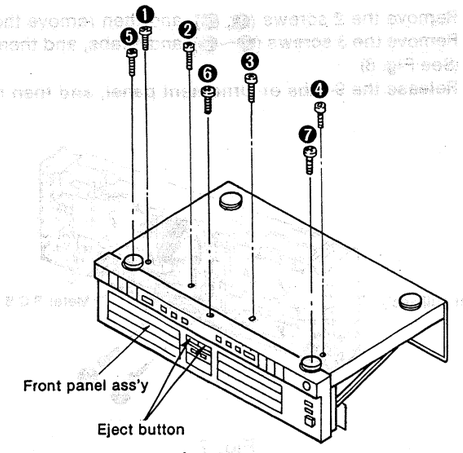


Fig. 5

Ref. No. 4	How to remove the Mechanism unit, Switch P.C.B and VR P.C.B.
Procedure 1→3→4	

1. Remove the 8 screws (❶~❽).
2. Remove the springs.
3. Push the Eject button, and then remove the Mechanism units (Deck A•B) in the direction of arrow.
4. Remove the one screw (❾), and then remove the Switch P.C.B.
5. Remove the 2 screws (❿, ⓫).
6. Release the 5 tabs, and then remove the Front panel in the direction of arrow.
7. Remove the Rec. level control Knob and Nut, and then remove the VR P.C.B.

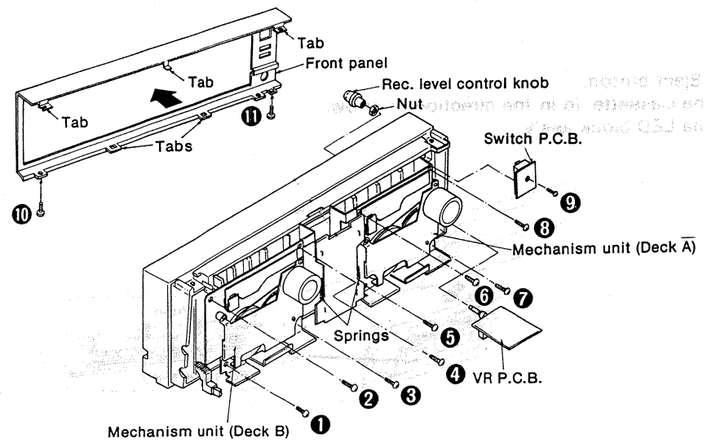


Fig. 6

Ref. No. 5	How to remove the Meter P.C.B. and Operation P.C.B.
Procedure 1→3→4 →5	

1. Remove the 2 screws (❶, ❷), and then remove the Meter P.C.B. (See Fig. 7)
2. Remove the 3 screws (❸~❺), and 4 tabs, and then remove the Ornament panel in the direction of arrow. (See Fig. 8)
3. Release the 9 tabs of Ornament panel, and then remove the Operation P.C.B. (See Fig. 9)

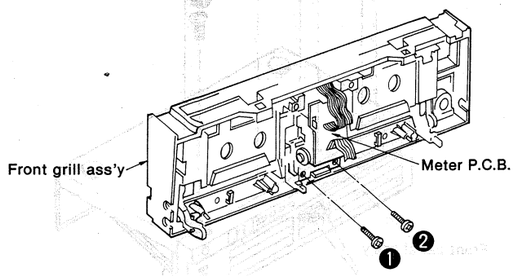


Fig. 7

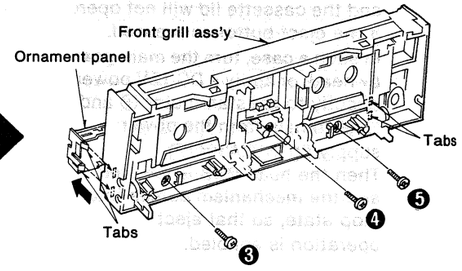


Fig. 8

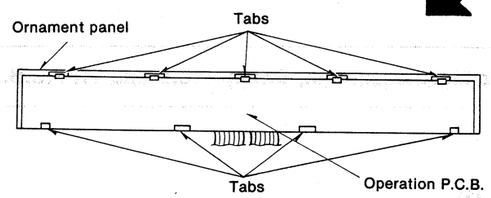


Fig. 9

Ref. No. 6	How to remove the LED block ass'y
Procedure 6	

1. Push the Eject button.
2. Remove the Cassette lid in the direction of arrow.
3. Remove the LED block ass'y.

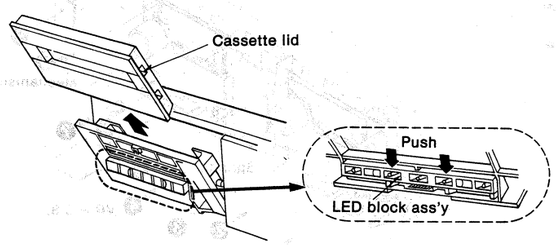
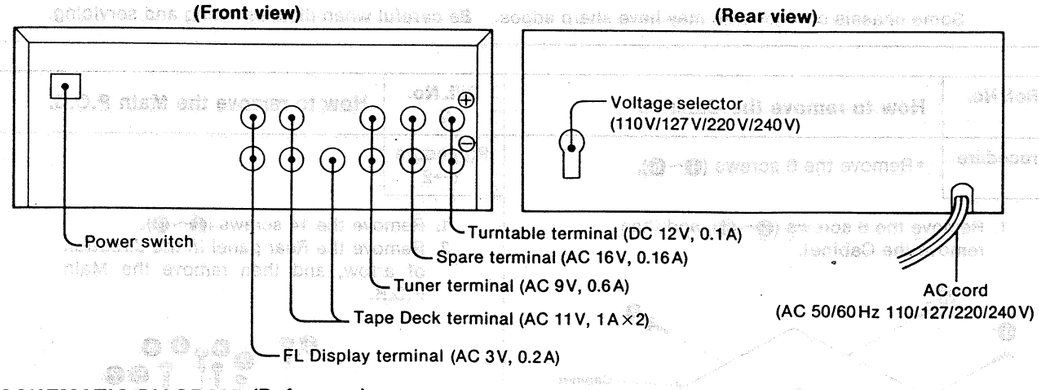


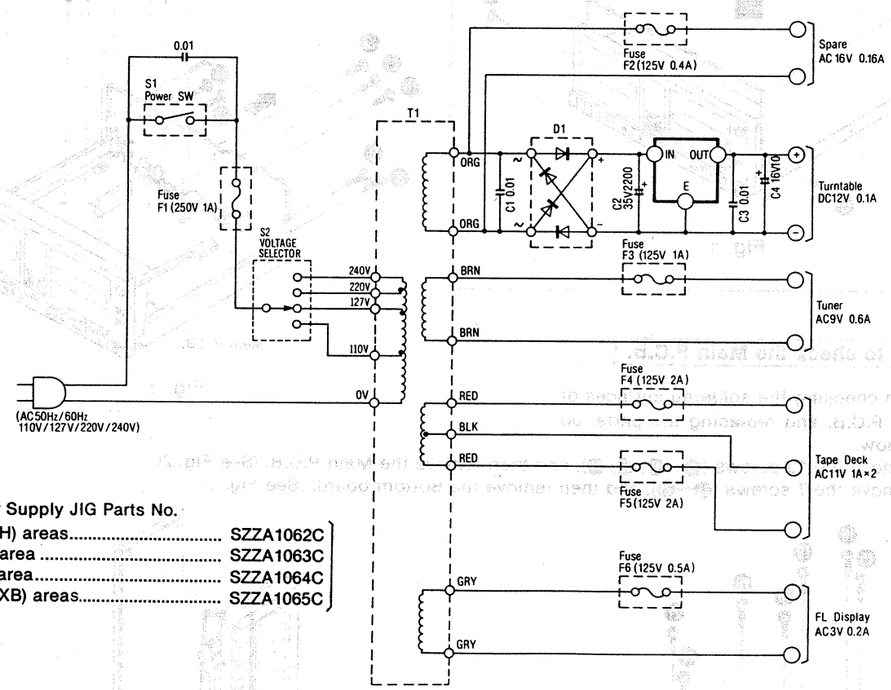
Fig. 10

■ INFORMATION ON POWER SUPPLY JIG

• LOCATION



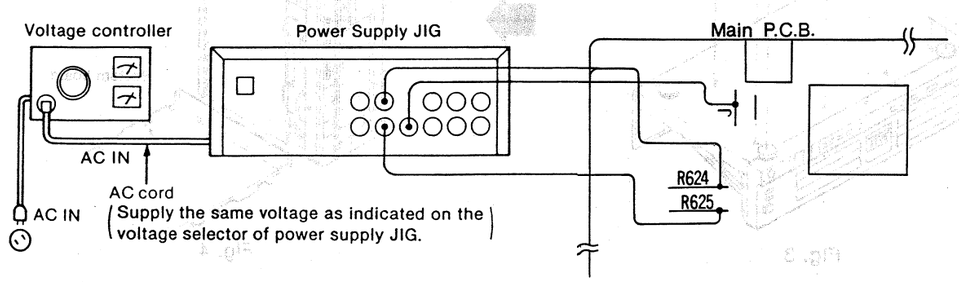
• SCHEMATIC DIAGRAM (Reference)



※ Power Supply JIG Parts No.

- (E, EH) areas..... SZZA1062C
- (EK) area SZZA1063C
- (XL) area..... SZZA1064C
- (XA, XB) areas..... SZZA1065C

• HOW TO CONNECT



■ MEASUREMENT AND ADJUSTMENT METHODES

Measurement Condition
- Rec. level control; Maximum
- Timer stand-by switch; Off
- Dolby NR Switch; Off
- Editing tape-speed selector; X1
- Make sure heads are clean
- Make sure capstan and pressure roller are clean
- Judgeable room temperature 20±5°C(68±9°F)

Measuring instrument
- EVM(Electronic Voltmeter)
- Oscilloscope
- Digital frequency counter
- AF oscillator
- ATT(Attenuator)
- DC voltmeter
- Resistor (600Ω)

Test tape
- Head azimuth adjustment (8kHz, -20dB); QZZCFM
- Tape speed adjustment (3kHz, -10dB); QZZCWAT
- Playback frequency response (315Hz, 12.5kHz, 10kHz, 8kHz, 4kHz, 1kHz, 250Hz, 125Hz, 63Hz, -20dB); QZZCFM
- Playback gain adjustment (315Hz, 0dB); QZZCFM
- Overall frequency response, Overall gain adjustment
  Normal reference blank tape;QZZCRA
  CrO_2 reference blank tape; QZZCRX
  Metal reference blank tape; QZZCRZ

HEAD AZIMUTH ADJUSTMENT

1. Playback the azimuth adjusment portion (8 kHz, -20 dB) of the test tape (QZZCFM). Vary the azimuth adjusting screw until the outputs of the L-CH and R-CH are maximized and the lissajous waveform, as illustrated, approaches 0 degrees.

Note: If L-CH and R-CH are not maximized at the same point, adjust to the point where the levels of each channel are maximized and equal.

2. Perform the same adjustment in the play mode.
3. After the adjustment, apply screwlock to the azimuth adjusting screw.

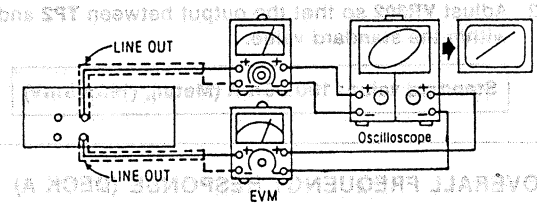


Fig. 1

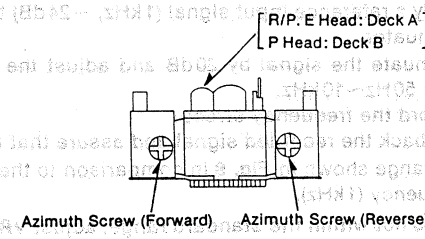


Fig. 2

TAPE SPEED ADJUSTMENT (DECK A/B)

High speed
1. Shift the editing tape speed switch to **"X2"** .
2. Playback the middle portion of the test tape (QZZCWAT).
3. Adjust Deck B=**VR804** and Deck A=**VR802** so that the output is within the standard value.

Normal speed
4. Shift the editing tape-speed selector to **"X1"** .
5. Playback the middle portion of the test tape (QZZCWAT).
6. Adjust Deck B=**VR803** and Deck A=**VR801** so that the output is within the standard value.

Standard value: 3000±15Hz (Normal), 6000±30Hz (High)

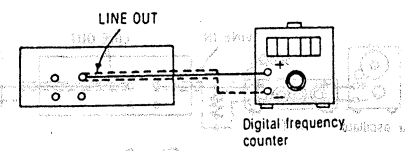


Fig. 3

PLAYBACK GAIN ADJUSTMENT (DECK A/B)

1. Playback the gain adjusted portion (315Hz, 0dB) of the test tape (QZZCFM).
2. Adjust Deck B=**VR1** (L-CH) [[**VR2** (R-CH)]] and Deck A=**VR3** (L-CH) [[**VR4** (R-CH)]] so that the output is within the standard value.

Standard value: 0.4V±0.5dB

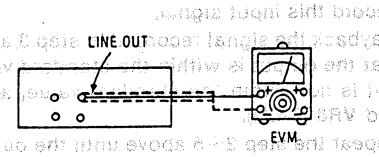


Fig. 4

PLAYBACK FREQUENCY RESPONSE (DECK A/B)

1. Playback the frequency response portion (315Hz, 12.5kHz~63Hz, −20dB) of the test tape (QZZCFM).
2. Assure that the frequency response is within the range shown in **Fig. 6** for both L-CH and R-CH.

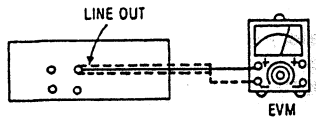


Fig. 5

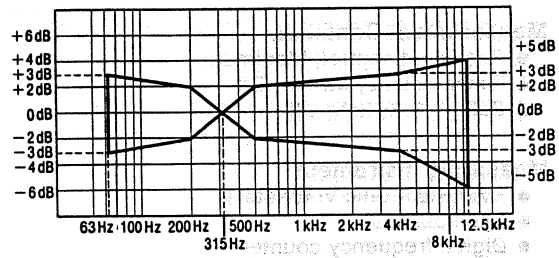


Fig. 6

ERASE CURRENT ADJUSTMENT (DECK A)

1. Insert the Metal blank test tape (QZZCRZ) and set the unit to the Record Pause mode.
2. Adjust **VR302** so that the output between **TP2** and GND is within the standard value.

Standard value: 190±5mA (Metal), (190±5mV)

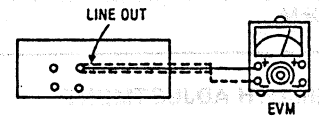


Fig. 7

OVERALL FREQUENCY RESPONSE (DECK A)

1. Insert the Normal blank test tape (QZZCRA) and set the unit to the Record Pause mode.
2. Apply a reference input signal (1kHz, −24dB) through an attenuator.
3. Attenuate the signal by 20dB and adjust the frequency from 50Hz~10kHz.
4. Record the frequency sweep.
5. Playback the recorded signal and assure that it is within the range shown in **Fig. 9** in comparison to the reference frequency (1kHz).
6. If it is not within the standard range, adjust **VR11** (L-CH) and **VR12** (R-CH) so that the frequency level is within the standard range.
7. Repeat steps 2~6 above using the CrO_2 tape (QZZCRX) and the Metal tape (QZZCRZ) increasing the frequency range to 12.5kHz (50Hz~12.5kHz).
8. Assure that the level is within the range shown in **Fig. 10.**

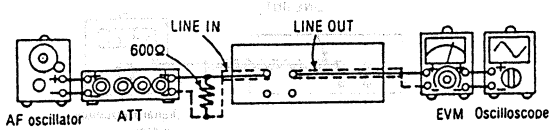


Fig. 8

Normal Overall frequency response chart (NR OUT)

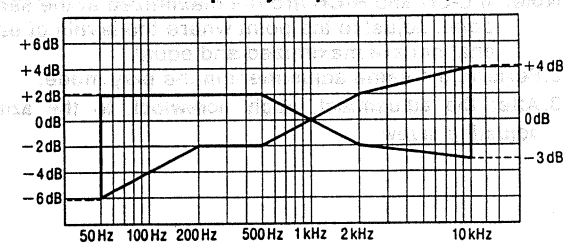


Fig. 9

CrO_2 Metal Overall frequency response chart (NR OUT)

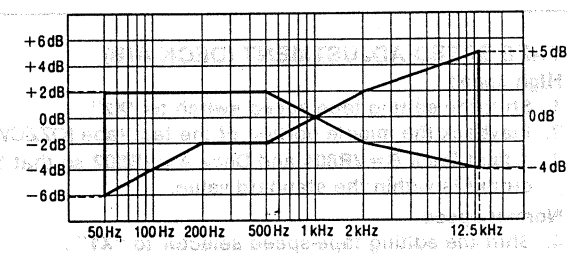


Fig. 10

OVERALL GAIN ADJUSTMENT (DECK A)

1. Insert the Normal blank test tape (QZZCRA) and set the unit to the Record pause mode.
2. Apply a reference input signal (1kHz, −24dB). Attenuate the output so that its level becomes 0.4V.
3. Record this input signal.
4. Playback the signal recorded in step 3 above, and assure that the output is within the standard value.
5. If it is not within the standard value, adjust **VR7** (L-CH) and **VR8** (R-CH).
6. Repeat the step 2~5 above until the output is within the standard value.

Standard value: 0V±0.5dB

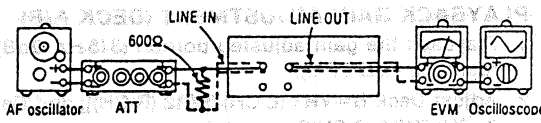


Fig. 11

FLUORESCENT METER ADJUSTMENT

1. Insert the Normal blank test tape(QZZCRA) and apply a reference input signal (1 kHz, -24 dB) in the Record Pause mode.
2. Using an attenuator, adjust until the voltage of the tape decks "LINE OUT" terminals is 0.4V.
3. Adjust **VR701** (L-CH) and **VR702** (R-CH) so that the "0dB" segment is slightly illuminated.

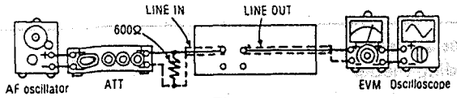


Fig. 12

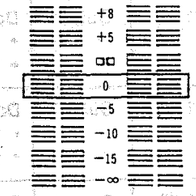
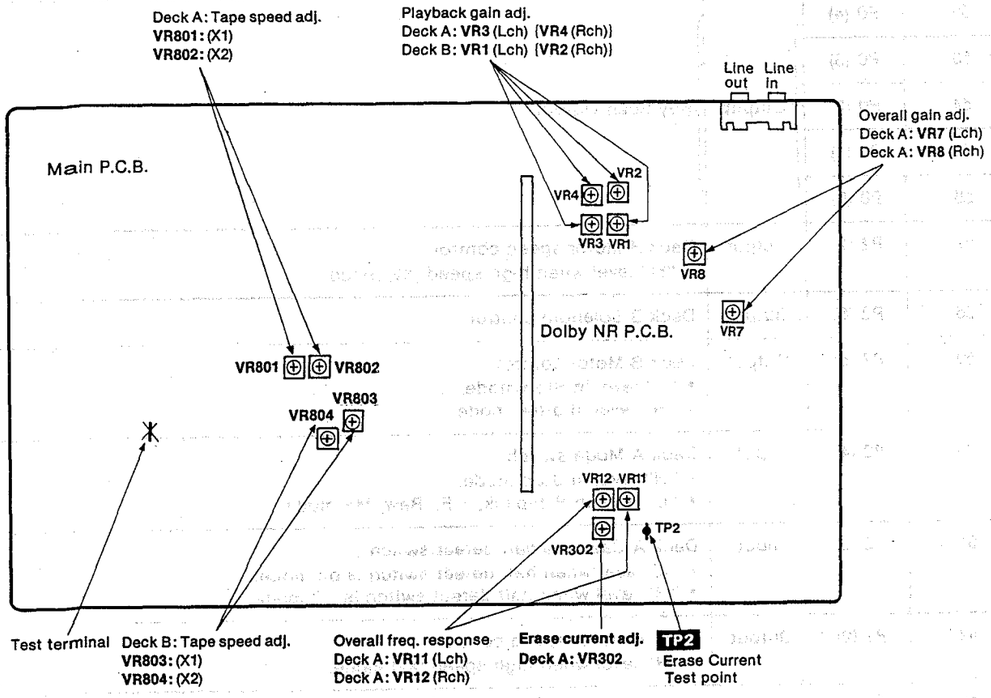
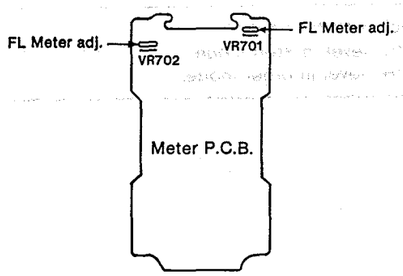


Fig. 13





■ MICROCOMPUTER TERMINAL FUNCTION (IC902: M50746-413SP)

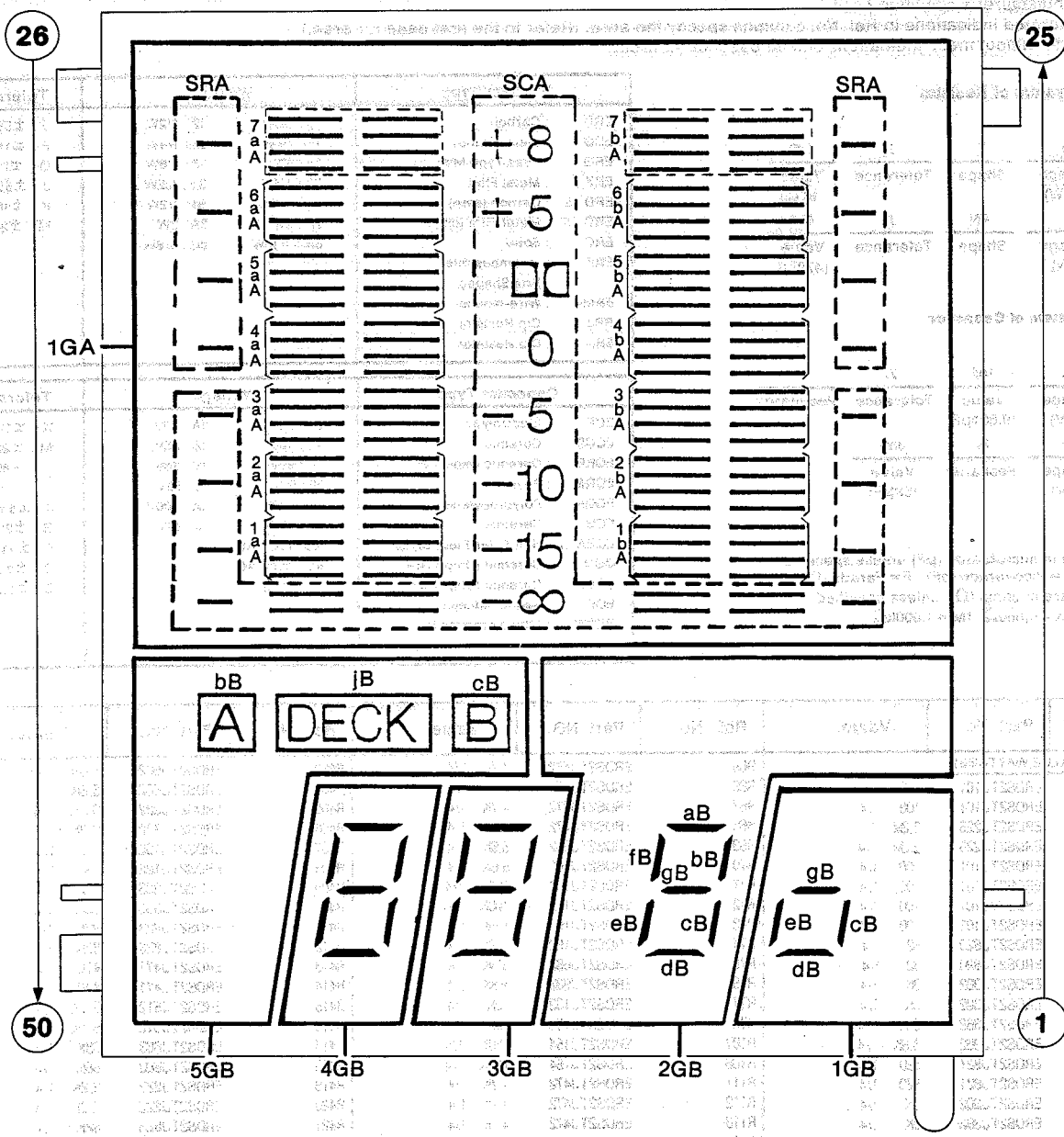
Pin No.	Symbol	In/Out	Description of terminal
1	V_{CC}	——	Power supply terminal
2	A V_{SS}	——	•Connected to V_{SS}.
3	V_{REF}	——	Standard voltage terminal
4	D-A	Output	CD Edit-recording LED display • "L" level when LED is on mode. • "H" level when LED is off mode.
5	PWM	——	Not used in this unit.
6	P6 (3)	Output	Deck A Bias OSC control • "L" level in REC-PLAY mode.
7	P6 (2)	Output	Meter mute control
8	P6 (1)	Output	REC. mute control
9	P6 (0)	Output	LINE OUT mute control • "L" level in PLAY mode. • "H" level in other mode.
10	AN (7)	——	Not used in this unit.
11	AN (6)	——	Not used in this unit.
12	AN (5)	Input	Key switch scan (Deck A: Stop, F.F., Rew, F. Play, R. Play, Rec., Pause Synchro start, Tape speed (X1•X2))
13	AN (4)	Input	Key switch scan (Deck B: Stop, F.F., Rew, F. Play, R. Play, Dolby B•C, NR Off, Counter reset, Deck A/B tape counter display)
14	P4 (3)	Input	Deck A Auto rec mute
15	P4 (2)	Input	Music selector pulse •Non recorded space detection
16	P4 (1)	Input	Synchro rec. input
17	P4 (0)	Output	Deck A/B Remote control LED display • "H" level in Deck A mode. • "L" level in Deck B mode.
18	P3 (7)	Output	Deck A Recording LED display • "L" level in Rec., Pause and Rec.-Play mode. • "H" level in other mode.
19	P3 (6)	Output	Deck A Direction LED display • "H" level in Forward mode. • "L" level in Reverse mode.
20	P3 (5)	Output	Deck A Playback LED display
21	P3 (4)	Output	Deck B Direction LED display • "H" level in Forward mode. • "L" level in Reverse mode.

Pin No.	Symbol	In/Out	Description of terminal
22	P3 (3)	Output	Deck B Playback LED display
23	P3 (2)	Output	Direct operation control signal
24	P3 (1)	Output	CD Edit-recording mode control
25	P3 (0)	Output	CD Edit-recording end detection
26	$\overline{INT1}$	Input	Power supply off detection
27	CN V_{SS}	——	Connected to V_{SS}
28	$\overline{RESET}$	Input	Reset terminal
29	X_{IN}	Input	Clock OSC terminal
30	X_{OUT}	Output	
31	ø	——	Not used in this unit.
32	V_{SS}	——	GND terminal
33	P5 (7)	Input	Reading of Key Scan input
34	P5 (6)	Input	
35	P5 (5)	Input	Deck B Rotation pulse signal of reel table
36	P5 (4)	Input	Deck A Rotation pulse signal of reel table
37	P5 (3)	Input	Deck A Reverse-side Rec. inhibit switch
38	P5 (2)	Input	Deck A Forward-side Rec. inhibit switch
39	P5 (1)	Input	Deck B Mode switch • "H" level in Stop mode. • "L" level in Playback, F.F, Rew and MS mode.
40	P5 (0)	Input	Deck B Cassette half detect switch • "L" level when half detect switch is on mode. • "H" level when half detect switch is off mode.
41	P1 (7)	Input	Remote control serial signal
42	P1 (6)	Output	Audio IC select control • "L" level in Deck A Playback and Cue/Rev. mode. • "H" level in other mode.
43	P1 (5)	Output	Rec. Playback equalizer speed select & Tape speed (X2) display. • "L" level in Tape speed is X2 mode. • "H" level in other mode.
44	P1 (4)	Output	Editing tape speed (X1) LED display. • "L" level in Editing tape speed (X1) mode. • "H" level in other mode.
45	P1 (3)	——	Not used in this unit.

OUT / IN	56 (P0 (0))	55 (P0 (1))	54 (P0 (2))	53 (P0 (3))	52 (P0 (4))
33 P5 (7)	Timer PLAY	Reverse mode	Play end IN	——	Leader tape detect (B)
34 P5 (6)	Timer REC.	Reverse mode	CD Edit IN	Test	Leader tape detect (A)

Pin No.	Symbol	In/Out	Description of terminal
46	P1 (2)	Output	Dolby NR select signal • "L" level in Dolby C mode. • "H" level in other mode.
47	P1 (1)	Output	Dolby NR select signal • "L" level in Dolby B mode. • "H" level in other mode.
48	P1 (0)	Output	Dolby Encode/Decode select signal • "L" level in Line in Recording mode. • "H" level in other mode.
49	P0 (7)	Output	Counter clock signal
50	P0 (6)	Output	Serial data signal
51	P0 (5)	Output	Counter serial data signal
52	P0 (4)	Output	Key Scan Output
53	P0 (3)		
54	P0 (2)		
55	P0 (1)		
56	P0 (0)		
57	P2 (7)	Output	Deck B Motor speed control • "H" level when high speed (X2) mode.
58	P2 (6)	Output	Deck B Solenoid control
59	P2 (5)	Output	Deck B Motor control • "L" level in Stop mode. • "H" level in other mode.
60	P2 (4)	Input	Deck A Mode switch • "H" level in Stop mode. • "L" level in Playback, F.F., Rew, MS mode.
61	P2 (3)	Input	Deck A Cassette half detect switch • "L" level when half detect switch is on mode. • "H" level when half detect switch is off mode.
62	P2 (2)	Output	Deck A Motor speed control • "H" level when high speed (X2) mode.
63	P2 (1)	Output	Deck A Solenoid control
64	P2 (0)	Output	Deck A Motor control • "L" level in Stop mode. • "H" level in other mode.

■ DESCRIPTION OF FL PANEL



Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	NP			NC	NC	1GA, SCA	1bA	2bA	3bA	4bA	5bA	6bA	7bA	SRA	NP

16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
NP								F1				NP	7aA	6aA	5aA	4aA	3aA	2aA	1aA	1GB

37	38	39	40	41	42	43	44	45	46	47	48	49	50
2GB	3GB	4GB	5GB, jB	aB	bB	cB	dB	eB	fB	gB	NP	F2	

■ RESISTORS & CAPACITORS

Notes : * Important safety notice :
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
* Bracketed indications in Ref. No. columns specify the area. (Refer to the first page for area.)
Parts without these indications can be used for all areas.

Numbering System of Resistor

Example:

ERD	25	F	J	102
Type	Wattage (1/4W)	Shape	Tolerance	Value (1KΩ)
ERX	2	AN	J	471
Type	Wattage (2W)	Shape	Tolerance	Value (470Ω)

Numbering System of Capacitor

Example:

ECKD	1H	102	Z	F
Type	Voltage (50V)	Value (0.001μF)	Tolerance	Peculiarity
ECEA	50	M	330	
Type	Voltage (50V)	Pecliarity	Value (33μF)	

- Capacity are in microfarads (μF) unless specified otherwise, P = Pico-farads (pF) F = Farads (F).
- Resistance are in ohms (Ω), unless specified otherwise, 1K = 1,000Ω, 1M = 1,000kΩ

Resistor Type		Wattage		Tolerance
ERD	: Carbon	10 : 1/8W	12 : 1/2W	J : ±5%
ERG	: Metal Oxide	14 : 1/4W	25 : 1/4W	F : ±1%
ERQ	: Fuse Type Metal	1A : 1W	18 : 1/8W	G : ±2%
ERX	: Metal Film	S2 : 1/4W	S1 : 1/2W	J : ±5%
ERD L	: Carbon (chip)	2F : 1/4W	50 : 1/2W	K : ±10%
ERO K	: Metal Film (chip)	2A : 2W	3A : 3W	M : ±20%
ERC	: Solid	6G : 1/10W	8G : 1/8W	
ERF	: Incombustible Box-Shaped			
ERM	: Wire-Wound			
RRJ	: Cip Resistor			
ERJ	: Cip Resistor			

Capacitor Type		Voltage		Tolerance
ECE	: Electrolytic	0J : 6.3V	1A : 10V	K : ±10%
ECCD	: Ceramic	1C : 16V	1E : 25V	M : ±20%
ECKD	: Ceramic Capacitor	1H : 50V	1V : 35V	Z : +80 −20 %
ECQM	: Poyester	50 : 50V	05 : 50V	J : ±5%
ECQP	: Polypropylene	2H : 500V	2A : 100V	G : ±2%
ECG	: Ceramic	1 : 100V	1J : 63V	F : ±1%
ECEA N	: Non Polar Electrolytic	KC : 400V AC		C : ±0.25pF
QCU	: Ceramic (Chip Type)	KC : 125V AC (UL)		D : ±0.5pF
ECUX	: Ceramic (Chip Type)			
ECF	: Semiconductor			
EECW	: Liquid electrolyte double layer capacitor			

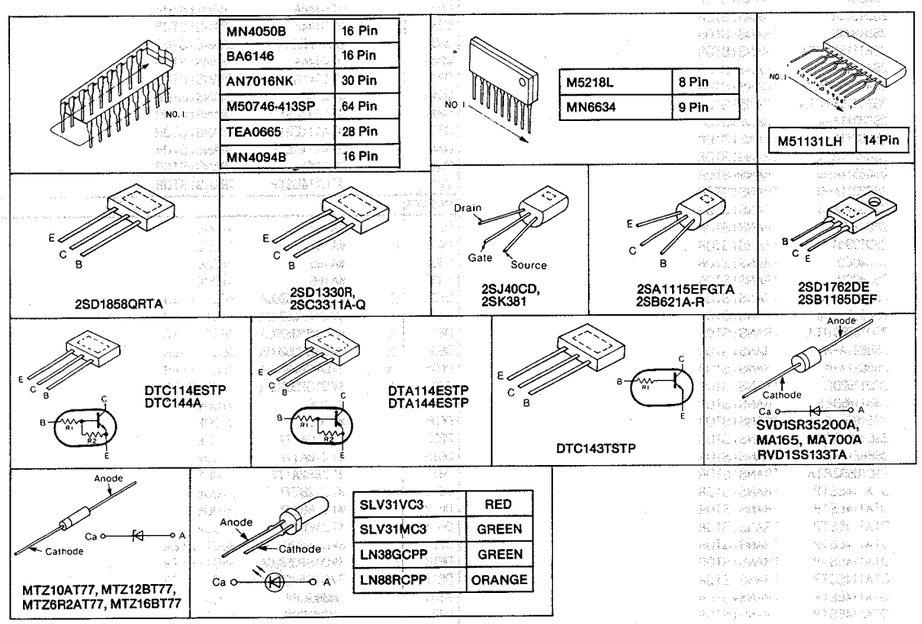
Ref. No.	Part No.	Value.		Ref. No.	Part No.	Value.		Ref. No.	Part No.	Value.	
RESISTORS(VALUE,WATTAGE)				R65	ERDS2TJ472	4.7K	1/4	R403	ERDS2TJ562	5.6K	1/4
R3	ERDS2TJ101	100	1/4	R66	ERDS2TJ472	4.7K	1/4	R404	ERDS2TJ562	5.6K	1/4
R4	ERDS2TJ101	100	1/4	R67	ERDS2TJ472	4.7K	1/4	R405	ERDS2TJ332	3.3K	1/4
R7	ERDS2TJ225	2.2M	1/4	R68	ERDS2TJ472	4.7K	1/4	R406	ERDS2TJ332	3.3K	1/4
R8	ERDS2TJ225	2.2M	1/4	R69	ERDS2TJ562	5.6K	1/4	R407	ERDS2TJ102	1K	1/4
R9	ERDS2TJ101	100	1/4	R70	ERDS2TJ562	5.6K	1/4	R408	ERDS2TJ102	1K	1/4
R10	ERDS2TJ101	100	1/4	R71	ERDS2TJ104	100K	1/4	R409	ERDS2TJ333	33K	1/4
R11	ERDS2TJ101	100	1/4	R72	ERDS2TJ104	100K	1/4	R410	ERDS2TJ333	33K	1/4
R12	ERDS2TJ101	100	1/4	R73	ERDS2TJ152	1.5K	1/4	R411	ERDS2TJ823	82K	1/4
R13	ERDS2TJ820	82	1/4	R74	ERDS2TJ152	1.5K	1/4	R412	ERDS2TJ823	82K	1/4
R14	ERDS2TJ820	82	1/4	R75	ERDS2TJ682	6.8K	1/4	R413	ERDS2TJ471	470	1/4
R15	ERDS2TJ302	3K	1/4	R76	ERDS2TJ682	6.8K	1/4	R414	ERDS2TJ471	470	1/4
R16	ERDS2TJ302	3K	1/4	R77	ERDS2TJ103	10K	1/4	R415	ERDS2TJ512	5.1K	1/4
R17	ERDS2TJ362	3.6K	1/4	R78	ERDS2TJ103	10K	1/4	R416	ERDS2TJ512	5.1K	1/4
R18	ERDS2TJ362	3.6K	1/4	R107	ERDS2TJ154	150K	1/4	R417	ERDS2TJ683	68K	1/4
R19	ERDS2TJ821	820	1/4	R108	ERDS2TJ154	150K	1/4	R418	ERDS2TJ683	68K	1/4
R20	ERDS2TJ821	820	1/4	R111	ERDS2TJ472	4.7K	1/4	R419	ERDS2TJ222	2.2K	1/4
R21	ERDS2TJ302	3K	1/4	R112	ERDS2TJ472	4.7K	1/4	R420	ERDS2TJ222	2.2K	1/4
R22	ERDS2TJ302	3K	1/4	R113	ERDS2TJ472	4.7K	1/4	R421	ERDS2TJ823	82K	1/4
R23	ERDS2TJ223	22K	1/4	R114	ERDS2TJ472	4.7K	1/4	R422	ERDS2TJ823	82K	1/4
R24	ERDS2TJ223	22K	1/4	R203	ERDS2TJ473	47K	1/4	R423	ERDS2TJ331	330	1/4
R25	ERDS2TJ472	4.7K	1/4	R204	ERDS2TJ683	68K	1/4	R424	ERDS2TJ331	330	1/4
R26	ERDS2TJ472	4.7K	1/4	R214	ERDS2TJ223	22K	1/4	R425	ERDS2TJ101	100	1/4
R27	ERDS2TJ183	18K	1/4	R215	ERDS2TJ225	2.2M	1/4	R426	ERDS2TJ101	100	1/4
R28	ERDS2TJ183	18K	1/4	R216	ERDS2TJ225	2.2M	1/4	R601	ERDS2TJ392	3.9K	1/4
R29	ERDS2TJ225	2.2M	1/4	R217	ERDS2TJ103	10K	1/4	R602	ERDS2TJ472	4.7K	1/4
R30	ERDS2TJ225	2.2M	1/4	R218	ERDS2TJ103	10K	1/4	R605	ERDS2TJ471	470	1/4
R49	ERDS2TJ682	6.8K	1/4	R302	ERDS2TJ1R0	1	1/4	R606	ERDS2TJ102	1K	1/4
R50	ERDS2TJ682	6.8K	1/4	R304	ERDS2TJ183	18K	1/4	R609	ERD2FCJ5R6	5.6	1/4
R51	ERDS2TJ472	4.7K	1/4	R306	ERDS2TJ183	18K	1/4	R610	ERDS2TJ102	1K	1/4
R52	ERDS2TJ472	4.7K	1/4	R308	ERDS2TJ100	10	1/4	R611	ERDS1FJ270	27	1/2
R53	ERDS2TJ102	1K	1/4	R310	ERDS2TJ100	10	1/4	(E, EH, EG, XA)			
R54	ERDS2TJ102	1K	1/4	R312	ERDS2TJ681	680	1/4	(XB)			
R55	ERDS2TJ330	33	1/4	R314	ERDS2TJ221	220	1/4	R611	ERG1ANJ560	56	1
R56	ERDS2TJ330	33	1/4	R316	ERDS2TJ681	680	1/4	(EK, XL)			
R57	ERDS2TJ272	2.7K	1/4	R317	ERDS2TJ182	1.8K	1/4	R612	ERDS1FJ270	27	1/2
R58	ERDS2TJ272	2.7K	1/4	R318	ERDS2TJ683	68K	1/4	(E, EH, EG, XA)			
R59	ERDS2TJ222	2.2K	1/4	R319	ERDS2TJ820	82	1/4	(XB)			
R60	ERDS2TJ222	2.2K	1/4	R321	ERDS2TJ331	330	1/4	R612	ERG1ANJ560	56	1
R63	ERDS2TJ103	10K	1/4	R324	ERD2FCG150	15	1/4	(EK, XL)			
R64	ERDS2TJ103	10K	1/4	R401	ERDS2TJ242	2.4K	1/4	R613	ERDS1FJ270	27	1/2
				R402	ERDS2TJ242	2.4K	1/4	R614	ERDS1FJ270	27	1/2

Ref. No.	Part No.	Value.
R616	ERDS2TJ392	3.9K 1/4
R617	ERD2FCG470	47 1/4
R618	ERD2FCG680	68 1/4
R619	ERDS2TJ102	1K 1/4
R620	ERDS2TJ561	560 1/4
R624 (E, EK, EH, XA) (XB, XL)	ERQ16NKR18E	0.18 1
R624 (EG)	ERQ16NKR22E	0.22 1
R625 (E, EK, EH, XA) (XB, XL)	ERQ16NKR18E	0.18 1
R625 (EG)	ERQ16NKR22E	0.22 1
R630	ERDS2TJ330	33 1/4
R700	ERDS2TJ821	820 1/4
R701	ERDS2TJ102	1K 1/4
R702	ERDS2TJ122	1.2K 1/4
R703	ERDS2TJ152	1.5K 1/4
R704	ERDS2TJ182	1.8K 1/4
R705	ERDS2TJ222	2.2K 1/4
R706	ERDS2TJ332	3.3K 1/4
R707	ERDS2TJ472	4.7K 1/4
R708	ERDS2TJ682	6.8K 1/4
R709	ERDS2TJ123	12K 1/4
R710	ERDS2TJ223	22K 1/4
R711	ERDS2TJ821	820 1/4
R712	ERDS2TJ102	1K 1/4
R713	ERDS2TJ122	1.2K 1/4
R714	ERDS2TJ152	1.5K 1/4
R715	ERDS2TJ182	1.8K 1/4
R716	ERDS2TJ222	2.2K 1/4
R717	ERDS2TJ332	3.3K 1/4
R718	ERDS2TJ472	4.7K 1/4
R719	ERDS2TJ682	6.8K 1/4
R722	ERDS2TJ102	1K 1/4
R723	ERDS2TJ102	1K 1/4
R724	ERDS2TJ331	330 1/4
R725	ERDS2TJ331	330 1/4
R727	ERDS2TJ821	820 1/4
R728	ERDS2TJ102	1K 1/4
R729	ERDS2TJ102	1K 1/4
R730	ERDS2TJ102	1K 1/4
R731	ERDS2TJ102	1K 1/4
R732	ERDS2TJ221	220 1/4
R733	ERDS2TJ221	220 1/4
R734	ERDS2TJ473	47K 1/4
R735	ERDS2TJ103	10K 1/4
R736	ERDS2TJ103	10K 1/4
R737	ERDS2TJ103	10K 1/4
R738	ERDS2TJ103	10K 1/4
R739	ERDS2TJ103	10K 1/4
R740	ERDS2TJ103	10K 1/4
R741	ERDS2TJ123	12K 1/4
R742	ERDS2TJ223	22K 1/4
R743	ERDS2TJ683	68K 1/4
R744	ERDS2TJ393	39K 1/4
R807	ERDS2TJ104	100K 1/4
R808	ERDS2TJ104	100K 1/4
R809	ERDS2TJ821	820 1/4
R810	ERDS2TJ821	820 1/4
R811	ERDS2TJ104	100K 1/4
R812	ERDS2TJ104	100K 1/4
R813	ERDS2TJ821	820 1/4
R814	ERDS2TJ821	820 1/4
R819	ERDS2TJ182	1.8K 1/4
R820	ERDS2TJ182	1.8K 1/4
R821	ERDS2TJ123	12K 1/4
R822	ERDS2TJ123	12K 1/4
R823	ERDS2TJ225	2.2M 1/4
R824	ERDS2TJ225	2.2M 1/4
R825	ERDS2TJ153	15K 1/4
R826	ERDS2TJ153	15K 1/4
R827	ERDS2TJ103	10K 1/4
R828	ERDS2TJ103	10K 1/4
R831	ERDS2TJ104	100K 1/4
R832	ERDS2TJ104	100K 1/4
R833	ERDS2TJ223	22K 1/4
R834	ERDS2TJ223	22K 1/4
R901	ERDS2TJ122	1.2K 1/4
R902	ERDS2TJ101	100 1/4
R903	ERDS2TJ823	82K 1/4
R904	ERDS2TJ393	39K 1/4
R905	ERDS2TJ472	4.7K 1/4
R906	ERDS2TJ102	1K 1/4
R907	ERDS2TJ473	47K 1/4
R908	ERDS2TJ333	33K 1/4
R909	ERDS2TJ272	2.7K 1/4
R910	ERDS2TJ103	10K 1/4
R915	ERDS2TJ103	10K 1/4
R916	ERDS2TJ332	3.3K 1/4
R917	ERDS2TJ103	10K 1/4
R918	ERDS2TJ563	56K 1/4
R921	ERDS2TJ473	47K 1/4
R922	ERDS2TJ473	47K 1/4
R923	ERDS2TJ393	39K 1/4
R925	ERDS2TJ103	10K 1/4
R926	ERDS2TJ104	100K 1/4
R927	ERDS2TJ223	22K 1/4
R929	ERDS2TJ562	5.6K 1/4
R930	ERDS2TJ104	100K 1/4
R931	ERDS2TJ123	12K 1/4
R932	ERDS2TJ104	100K 1/4
R934	ERDS2TJ473	47K 1/4
R935	ERDS2TJ472	4.7K 1/4
R936	ERDS2TJ103	10K 1/4
R937	ERDS2TJ153	15K 1/4
R938	ERDS2TJ103	10K 1/4
R939	ERDS2TJ272	2.7K 1/4
R941	ERDS2TJ103	10K 1/4
R942	ERDS2TJ123	12K 1/4
R945	ERDS2TJ562	5.6K 1/4
R946	ERDS2TJ681	680 1/4
R948	ERDS2TJ562	5.6K 1/4
R949	ERDS2TJ681	680 1/4
R954	ERDS2TJ223	22K 1/4
R955	ERDS2TJ223	22K 1/4
R956	ERDS2TJ105	1M 1/4
R957	ERDS2TJ182	1.8K 1/4
R958	ERDS2TJ103	10K 1/4
R959	ERDS2TJ471	470 1/4
R960	ERDS2TJ223	22K 1/4
R961	ERDS2TJ223	22K 1/4
R962	ERDS2TJ123	12K 1/4
R963	ERDS2TJ562	5.6K 1/4
R964	ERDS2TJ272	2.7K 1/4
R966	ERDS2TJ273	27K 1/4
R967	ERDS2TJ223	22K 1/4
R968	ERDS2TJ103	10K 1/4
R969	ERDS2TJ473	47K 1/4
R970	ERDS2TJ223	22K 1/4
R971	ERDS2TJ103	10K 1/4
R972	ERDS2TJ103	10K 1/4
R973	ERDS2TJ223	22K 1/4
R976	ERDS2TJ102	1K 1/4
R977	ERDS2TJ102	1K 1/4
R978	ERDS2TJ102	1K 1/4
R979	ERDS2TJ103	10K 1/4
R980	ERDS2TJ103	10K 1/4
R981	ERDS2TJ103	10K 1/4
R982	ERDS2TJ223	22K 1/4
R983	ERDS2TJ102	1K 1/4
R984	ERDS2TJ223	22K 1/4
R985	ERDS1FJ223	22K 1/2
R986	ERDS2TJ472	4.7K 1/4
R989	ERDS2TJ102	1K 1/4
R990	ERDS2TJ104	100K 1/4
R991	ERDS2TJ473	47K 1/4

CAPACITORS(VALUE,VOLTAGE)

C3	ECKD1H122KB	1200P 50
C4	ECKD1H122KB	1200P 50
C5	ECKD1H391KB	390P 50
C6	ECKD1H391KB	390P 50
C9	ECKD1H561KB	560P 50
C10	ECKD1H561KB	560P 50
C11	ECEA0JU101	100 6.3
C12	ECEA0JU101	100 6.3
C13	ECQB1H123JZ	0.012 50
C14	ECQB1H123JZ	0.012 50
C15	ECEA1HU4R7	4.7 50
C16	ECEA1HU4R7	4.7 50
C17	RCBS1H181KBY	180P 50
C18	RCBS1H181KBY	180P 50
C19	ECEA1HUR47	0.47 50
C20	ECEA1HUR47	0.47 50
C21	ECEA1HU010	1 50
C22	ECEA1HU010	1 50
C35	ECKD1H102KB	0.001 50
C36	ECKD1H102KB	0.001 50
C37	ECQB1H223JZ	0.022 50
C38	ECQB1H223JZ	0.022 50
C39	ECQB1H123JZ	0.012 50
C40	ECQB1H123JZ	0.012 50
C41	ECQB1H273JZ	0.027 50
C42	ECQB1H273JZ	0.027 50
C43	ECQB1H682JZ	0.0068 50
C44	ECQB1H682JZ	0.0068 50
C45	ECKD2H121KB	120P 500
C46	ECKD2H121KB	120P 500
C49	ECBT1H561KB5	560P 50
C50	ECBT1H561KB5	560P 50
C55	ECCC1H221K	220P 50
C56	ECCC1H221K	220P 50
C57	ECEA1CKS100	10 16
C58	ECEA1CU100	10 16
C59	ECEA1CU100	10 16
C60	ECEA1CU100	10 16
C61	ECEA1CU100	10 16
C62	ECEA1CU100	10 16
C65	ECEA1CU100	10 16
C66	ECEA1CU100	10 16
C205	ECEA1EU220	22 25
C302	ECQP1153JZW	0.015 100
C304	ECKD1H392KB	0.0039 50
C306	ECFR1E222KAY	2200P 25
C308	ECFR1E222KAY	2200P 25
C310	ECEA1EU221	220 25
C312	ECKD1H103PF	0.01 50
C314	ECFR1E682KAY	6800P 25
C401	ECCD1H820K	82P 50
C402	ECCD1H820K	82P 50
C403	ECQB1H472JZ	4700P 50
C404	ECQB1H472JZ	4700P 50
C405	ECEA1CKS100	10 16
C406	ECEA1CKS100	10 16
C407	ECQM1H473JZ	0.047 50
C408	ECQM1H473JZ	0.047 50
C409	ECQV1H224JZ	0.22 50
C410	ECQV1H224JZ	0.22 50
C411	ECAG25ER68L	0.68 50
C412	ECAG25ER68L	0.68 50
C413	ECQB1H103JZ	0.01 50
C414	ECQB1H103JZ	0.01 50
C415	ECQB1H472JZ	4700P 50
C416	ECQB1H472JZ	4700P 50
C417	ECEA1CKS100	10 16
C418	ECEA1CKS100	10 16
C419	ECQM1H473JZ	0.047 50
C420	ECQM1H473JZ	0.047 50
C421	ECQV1H224JZ	0.22 50
C422	ECQV1H224JZ	0.22 50
C423	ECAG25ER68L	0.68 50
C424	ECAG25ER68L	0.68 50
C425	ECKD1H152KB	1500P 50
C426	ECKD1H152KB	1500P 50
C427	ECKD1H122KB	1200P 50
C428	ECKD1H122KB	1200P 50
C601 (EG) ⚠	ECKDKC103PF2	0.01 125
C602	ECEA1CU221	220 16
C603	ECEA1VU471	470 35
C604	ECKD1H103PF	0.01 50
C605	ECEA1ES332	3300 25
C606	ECEA1EU102	1000 25
C607	ECEA1AU221	220 10
C608	ECEA1AU221	220 10
C609	ECKD1H103PF	0.01 50
C610	ECBT1E103ZF	0.01 25
C611	ECKD1H103PF	0.01 50
C612	ECEA1CU100	10 16
C614	ECEA1VU471	470 35
C615	ECEA10V1000	1000 10
C616	ECEA0JU222	2200 6.3
C617	ECKD1H103PF	0.01 50
C618	ECKD1H103PF	0.01 50
C619	ECEA1CU221	220 16
C620	ECEA1CU470	47 16
C621	ECEA1EU470	47 25
C622	ECEA1EU101	100 25
C623	ECEA1EU470	47 25
C624	ECKD1H103PF	0.01 50
C625	ECBT1E103ZF	0.01 25
C626	ECEA0JU222	2200 6.3
C627	ECKD1H103PF	0.01 50
C630	ECEA1CU222	2200 16
C631	ECBT1E103ZF	0.01 25
C632 (E, EK, EH, XA) (XB, XL)	ECKD1H473ZF	0.047 50
C701	ECQV1H104JZ	0.1 50
C702	ECQV1H104JZ	0.1 50
C703	ECEA1CU330	33 16
C704	ECEA1CU330	33 16
C803	ECEA1HU010	1 50
C804	ECEA1HU010	1 50
C805	ECEA1EU4R7	4.7 25
C806	ECEA1EU4R7	4.7 25
C901	ECQB1H822JZ	0.0082 50
C902	ECCD1H470K	47P 50
C903	ECEA1HU010	1 50
C904	ECEA1CU100	10 16
C905	ECKD1H103PF	0.01 50
C906	ECEA1AU221	220 10
C907	ECEA1EU4R7	4.7 25
C910	ECEA1EU4R7	4.7 25
C911	ECEA1HU010	1 50
C912	ECKD1H103PF	0.01 50
C913	ECBT1E103ZF	0.01 25
C914	ECBT1E103ZF	0.01 25
C915	ECBT1E103ZF	0.01 25

■ TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES



■ REPLACEMENT PARTS LIST

Notes : * Important safety notice :
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
* Bracketed indications in Ref. No. columns specify the area. (Refer to the first page for area.)
Parts without these indications can be used for all areas.

Ref. No.	Part No.	Description
INTEGRATED CIRCUITS		
IC1	AN7016NK	I.C, REC./PLAYBACK AMP.
IC7	MN6634	I.C, A/B INPUT SELECTOR
IC201	M51131LH	I.C, REC. LEVEL CONTROL
IC401	TEA0665	I.C, DOLBY B-C NR
IC402	TEA0665	I.C, DOLBY B-C NR
IC700	MN4094B	I.C, SHIFT REGISTER
IC701	BA6146	I.C, FL METER DRIVE
IC702	BA6146	I.C, FL METER DRIVE
IC901	M5218L	I.C, MUSIC SELECTOR AMP.
IC902	M50746-413SP	I.C, MICRO COMPUTER
IC903	MN4050B	I.C, SHIFT REGISTER
IC951	DN6851A	I.C, HALL
IC971	DN6851A	I.C, HALL
TRANSISTORS		
Q3	2SJ40CD	TRANSISTOR
Q4	2SJ40CD	TRANSISTOR
Q7	2SK381	TRANSISTOR
Q8	2SK381	TRANSISTOR
Q17	2SD1330R	TRANSISTOR
Q18	2SD1330R	TRANSISTOR
Q19	2SA1115EFGTA	TRANSISTOR
Q20	2SA1115EFGTA	TRANSISTOR
Q21	2SA1115EFGTA	TRANSISTOR
Q22	2SA1115EFGTA	TRANSISTOR
Q23	2SC3311A-Q	TRANSISTOR
Q24	2SC3311A-Q	TRANSISTOR
Q25	2SC3311A-Q	TRANSISTOR
Q26	2SC3311A-Q	TRANSISTOR
Q27	2SC3311A-Q	TRANSISTOR
Q28	2SC3311A-Q	TRANSISTOR
Q29	2SD1330R	TRANSISTOR
Q30	2SD1330R	TRANSISTOR
Q203	2SJ40CD	TRANSISTOR
Q204	2SJ40CD	TRANSISTOR
Q302	2SC3311A-Q	TRANSISTOR
Q304	2SC3311A-Q	TRANSISTOR
Q306	2SD1858QRTA	TRANSISTOR
Q308	2SB621A-R	TRANSISTOR
Q310	2SB621A-R	TRANSISTOR
Q601	2SD1762DE	TRANSISTOR
Q602	2SB1185DEF	TRANSISTOR
Q603	2SD1858QRTA	TRANSISTOR
Q604	2SD1858QRTA	TRANSISTOR
Q605	2SB621A-R	TRANSISTOR
Q606	2SD1858QRTA	TRANSISTOR
Q700	DTA114ESTP	TRANSISTOR
Q701	DTA114ESTP	TRANSISTOR
Q702	DTA114ESTP	TRANSISTOR
Q703	DTA114ESTP	TRANSISTOR
Q704	DTA114ESTP	TRANSISTOR
Q705	DTA114ESTP	TRANSISTOR
Q706	DTA114ESTP	TRANSISTOR
Q707	DTA114ESTP	TRANSISTOR
Q709	DTA114ESTP	TRANSISTOR
Q710	DTA114ESTP	TRANSISTOR
Q711	DTA114ESTP	TRANSISTOR
Q712	DTA114ESTP	TRANSISTOR
Q713	2SD1330R	TRANSISTOR
Q714	2SD1330R	TRANSISTOR
Q802	2SB621A-R	TRANSISTOR
Q803	DTC114ESTP	TRANSISTOR
Q805	2SB621A-R	TRANSISTOR
Q806	DTC114ESTP	TRANSISTOR
Q807	2SB621A-R	TRANSISTOR
Q808	DTC114ESTP	TRANSISTOR
Q809	2SB621A-R	TRANSISTOR
Q810	DTC114ESTP	TRANSISTOR
Q811	2SK381	TRANSISTOR
Q812	2SK381	TRANSISTOR
Q817	DTC143TSTP	TRANSISTOR
Q818	DTC143TSTP	TRANSISTOR
Q901	2SC3311A-Q	TRANSISTOR
Q902	2SA1115EFGTA	TRANSISTOR
Q903	2SC3311A-Q	TRANSISTOR
Q904	DTA144ESTP	TRANSISTOR
Q906	DTA114ESTP	TRANSISTOR
Q909	DTA114ESTP	TRANSISTOR
Q910	2SC3311A-Q	TRANSISTOR
Q911	2SC3311A-Q	TRANSISTOR
Q912	DTA144ESTP	TRANSISTOR
Q913	DTA144ESTP	TRANSISTOR
Q914	2SA1115EFGTA	TRANSISTOR
Q915	DTC114ESTP	TRANSISTOR
Q916	DTA114ESTP	TRANSISTOR
Q917	DTA114ESTP	TRANSISTOR
Q919	DTA114ESTP	TRANSISTOR
Q920	DTC114ESTP	TRANSISTOR
Q921	DTC114ESTP	TRANSISTOR
Q922	2SC3311A-Q	TRANSISTOR
Q927	DTC144A	TRANSISTOR
Q930	DTC144A	TRANSISTOR
Q934	2SA1115EFGTA	TRANSISTOR
Q935	DTC144A	TRANSISTOR
Q936	DTC144A	TRANSISTOR
Q940	DTC144A	TRANSISTOR
Q941	DTA114ESTP	TRANSISTOR
Q942	DTA114ESTP	TRANSISTOR
Q945	DTA114ESTP	TRANSISTOR
Q946	DTC144A	TRANSISTOR
Q947	DTC114ESTP	TRANSISTOR
DIODES		
D3	MA165	DIODE
D4	MA165	DIODE
D301	MA165	DIODE
D303	MA165	DIODE
D601 ⚠	SVD1SR35200A	RECTIFIER
D602 ⚠	SVD1SR35200A	RECTIFIER
D603 ⚠	SVD1SR35200A	RECTIFIER
D604 ⚠	SVD1SR35200A	RECTIFIER
D605 ⚠	SVD1SR35200A	RECTIFIER
D606 ⚠	SVD1SR35200A	RECTIFIER
D607	MA165	DIODE
D608	MA165	DIODE
D609	MTZ10AT77	DIODE
D610	MTZ10AT77	DIODE
D611	MTZ6R2AT77	DIODE
D612	MTZ12BT77	DIODE
D613	MTZ16BT77	DIODE
D614	MTZ16BT77	DIODE
D615 ⚠	SVD1SR35200A	RECTIFIER
D616 ⚠	SVD1SR35200A	RECTIFIER
D617 ⚠	SVD1SR35200A	RECTIFIER
D700	LN38GCPP	L.E.D
D701	LN38GCPP	L.E.D
D702	LN38GCPP	L.E.D
D703	LN38GCPP	L.E.D
D704	LN88RCPP	L.E.D
D705	MA4033	DIODE
D706	MA165	DIODE
D707	MA165	DIODE
D708	SLV31MC3	L.E.D
D709	SLV31MC3	L.E.D
D710	SLV31VC3	L.E.D
D711	SLV31VC3	L.E.D
D712	SLV31VC3	L.E.D
D809	MA165	DIODE
D810	MA165	DIODE
D901	MA165	DIODE
D904	MA165	DIODE
D905	MA165	DIODE
D906	MA165	DIODE
D907	MA165	DIODE
D909	MA165	DIODE
D910	MA700A	DIODE
D911	MA700A	DIODE
D912	MA165	DIODE
D914	MA165	DIODE
D916	MA165	DIODE
D917	MA165	DIODE
D918	MA165	DIODE
D919	MA165	DIODE
D926	MA165	DIODE
D927	MA165	DIODE
D930	MA165	DIODE
D935	MA165	DIODE
D940	MA165	DIODE
D943	MA165	DIODE
D945	MA165	DIODE
D946 ⚠	SVD1SR35200A	RECTIFIER
D948	MA165	DIODE
D951	RVD1SS133TA	DIODE
D952	MA165	DIODE
D953	MA165	DIODE
D954	MTZ10AT77	DIODE
D955	MA165	DIODE
D956	MA165	DIODE
D971	RVD1SS133TA	DIODE
I.C.PROTECTORS		
ICP601	SRUN10	IC PROTECTOR
VARIABLE RESISTORS		
VR1	EVND4AA00B24	V.R, P.B. GAIN (L) , B
VR2	EVND4AA00B24	V.R, P.B. GAIN (R) , B
VR3	EVND4AA00B24	V.R, P.B. GAIN (L) , A
VR4	EVND4AA00B24	V.R, P.B. GAIN (R) , A
VR7	EVND4AA00B14	V.R, OVERALL GAIN (L)
VR8	EVND4AA00B14	V.R, OVERALL GAIN (R)
VR11	EVND4AA00B15	V.R, O.F. RESPONSE (L)
VR12	EVND4AA00B15	V.R, O.F. RESPONSE (R)
VR13	EWH97V008B15	V.R, REC. LEVEL
VR302	EVND4AA00B53	V.R, BIAS CURRENT ADJ.
VR701	EVNM0AA00B54	V.R, FL METER ADJ. (L)
VR702	EVNM0AA00B54	V.R, FL METER ADJ. (R)
VR801	EVND4AA00B14	V.R, TAPE SPEED (X1) , A
VR802	EVND4AA00B14	V.R, TAPE SPEED (X1) , B
VR803	EVN4LCA00B14	V.R, TAPE SPEED (X2) , A
VR804	EVN4LCA00B14	V.R, TAPE SPEED (X2) , B
COILS AND TRANSFORMERS		
L3	SLQX303-1K	CHOKE COIL
L4	SLQX303-1K	CHOKE COIL
L7	SLQX272-1YT	CHOKE COIL
L8	SLQX272-1YT	CHOKE COIL
L302	SL09C29-K	COIL
L401	QLB40048	M.P.X. COIL
L402	QLB40048	M.P.X. COIL
L403	ELM7Q306A	CHOKE COIL
L404	ELM7Q306A	CHOKE COIL
T601 ⚠ (EG)	SLT5V19	POWER TRANSFORMER
T602 ⚠ (E, EK, EH, XA) (XB, XL)	SLT5G2	POWER TRANSFORMER
COMPONENT COMBINATIONS		
Z701	EXBF6E223J	COMPONENT COMBINATION
Z702	EXBF8E223J	COMPONENT COMBINATION
Z901	EXBF7E562J	COMPONENT COMBINATION
OSCILLATORS		
X901	EF0FC4004A4	CERAMIC FILTER
DISPLAYS		
FL1	SADFV272G	FL DISPLAY
FUSES		
F1 ⚠ (EG)	XBA2C20TB0	FUSE 250V, T2A
SWITCHES		
S601 ⚠ (EG)	ESB8249V	SW, POWER
S601 ⚠ (E, EK, EH, XA) (XB, XL)	SSH1226	SW, POWER
S700	SSS147-1	SW, TIMER
S701	SSS147-1	SW, REVERSE MODE SELECT
S702	EVQQB005R	SW, STOP (DECK A)
S703	EVQQB005R	SW, FF/REW (DECK A)
S704	EVQQB005R	SW, REW/FF (DECK A)
S705	EVQQB005R	SW, PLAY (FWD) (DECK A)
S706	EVQQB005R	SW, PLAY (REV) (DECK A)
S707	EVQQB005R	SW, REC (DECK A)
S708	EVQQB005R	SW, PAUSE (DECK A)
S709	EVQQB005R	SW, DOLBY C NR
S710	EVQQB005R	SW, SYNCHRO START
S711	EVQQB005R	SW, SPEED (X2)
S712	EVQQB005R	SW, SPEED (X1)
S715	EVQQB005R	SW, AUTO REC MUTE (A)
S716	EVQQB005R	SW, STOP (DECK B)
S717	EVQQB005R	SW, FF/REW (DECK B)
S718	EVQQB005R	SW, REW/FF (DECK B)
S719	EVQQB005R	SW, PLAY (FWD) (DECK B)
S720	EVQQB005R	SW, PLAY (REV) (DECK B)
S724	EVQQB005R	SW, DOLBY B NR
S725	EVQQB005R	SW, DOLBY NR OFF
S727	EVQQB005R	SW, RESET
S728	EVQQB005R	SW, DECK A/B SELECTOR
S951	RSH1A89Z	SW, MODE (DECK B)
S952	RSH1A90Z	SW, HALF (DECK B)
S953	RSH1A90Z	SW, ATS(120/70)(DECK B)
S971	RSH1A89Z	SW, MODE (DECK A)
S972	RSH1A90Z	SW, HALF (DECK A)
S973	RSH1A90Z	SW, REC. INHIBIT(REV)(A)
S974	RSH1A90Z	SW, REC. INHIBIT(FWD)(A)
S975	RSH1A90Z	SW, ATS(120/70)(DECK A)
S976	RSH1A90Z	SW, ATS(METAL)(DECK A)

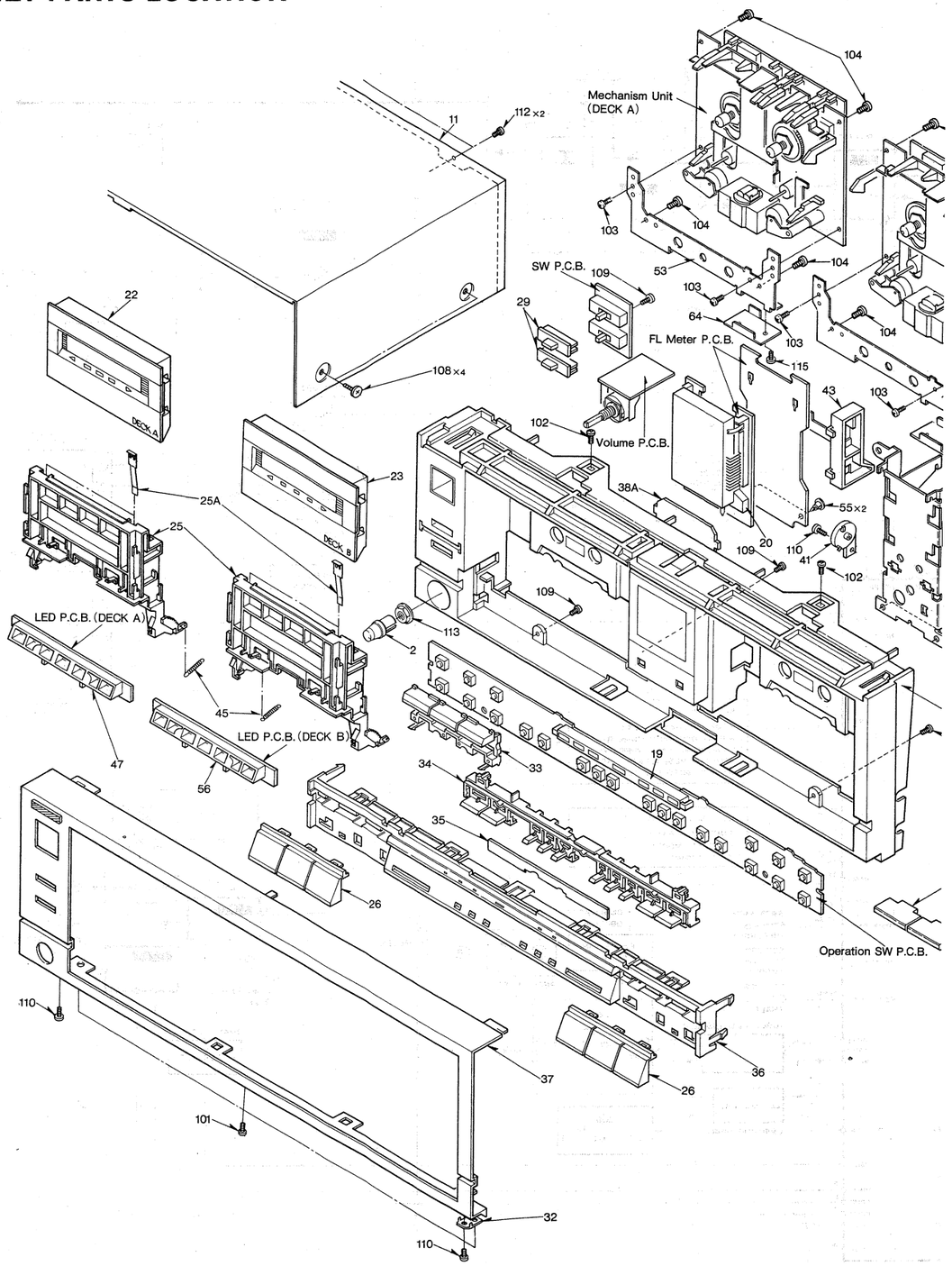
Ref. No.	Part No.	Description
PACKING MATERIAL		
P1	SPGM118	PACKING CASE
P2	SPS5054	PAD (FRONT)
P3	SPS5055	PAD (BACK)
P4	SPS5087	PAD (ACCESSORY)
P5	SPPM2	PROTECTION COVER
ACCESSORIES		
A1 ⚠ (EG)	SFDAC05E03	POWER CORD
A2	SJPK2202	CORD
A3	QLGM0517-1	CORD (4P)
A4	QLGM0487	CORD (8P)
A5 (E, EK, EH, XA) (XB, XL)	QLGM0488	CORD (3P)
A6 (E, EH)	SQF13289	INSTRUCTION MANUAL
A6 (EK)	SQF13290	INSTRUCTION MANUAL
A6 (XA)	SQF13291	INSTRUCTION MANUAL
A6 (EG)	SQF13292	INSTRUCTION MANUAL
A6 (XB, XL)	SQF13295	INSTRUCTION MANUAL

■ REPLACEMENT PARTS LIST

Notes : ＊Important safety notice :
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
＊Bracketed indications in Ref. No. columns specify the area. (Refer to the first page for area.)
Parts without these indications can be used for all areas.

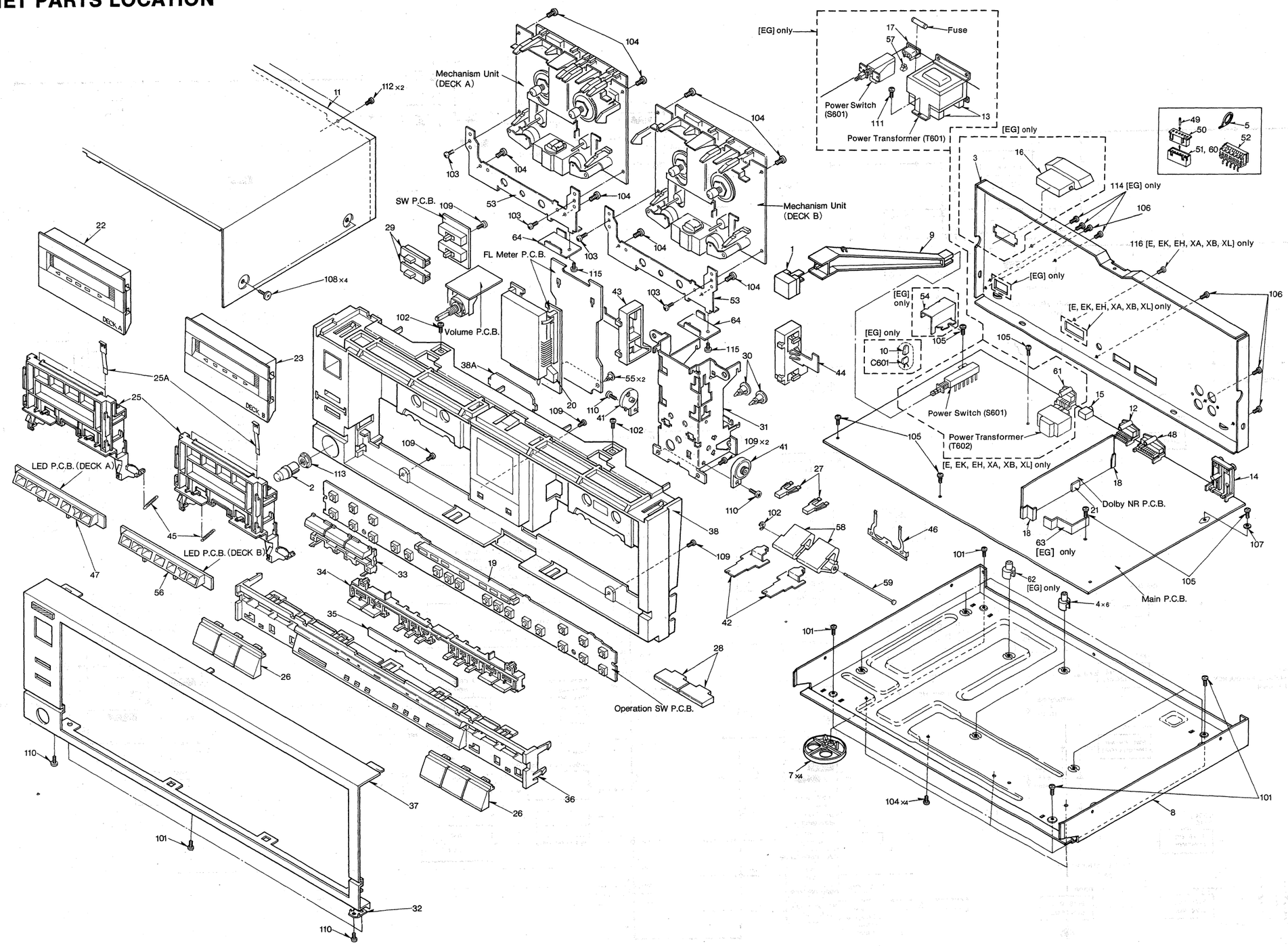
Ref. No.	Part No.	Description
CABINET AND CHASSIS		
1	SBC666-1	BUTTON, POWER
2	SBN1222	KNOB, REC LEVEL
3	SGP7060-15C	REAR PANEL
(E, EH, XA, XB)		
(XL)		
3	SGP7060-15D	REAR PANEL
(EK)		
3	SGP7060-16E	REAR PANEL
(EG)		
4	SHE187-2	HOLDER
5	SHR301	CLAMPER
7	SKL307	FOOT
8	SKU11651-1	BOTTOM BOARD
9	SUB264-1	ROD
10	SMX897	COVER
(EG)		
11	SKC2070K16	CABINET
12	SJS402	SOCKET(4P)
13	SJS703	SOCKET(7P)
(EG)		
14	SJF3057N	TERMINAL BOARD
15	SJJ130-2	JACK(REMOTE)
16 ⚠	SJS9225	AC OUTLET
(EG)		
17 ⚠	SJS9236	AC INLET
(EG)		
18	SME103-4	SHIELD PLATE
19	SWV103	LED BLOCK ASS'Y (D708--D712)
20	SHE231	PLASTIC SPACER
21	SMN2043	ANGLE
22	SGE1902-2	CASSETTE LID (DECK A)
23	SGE1902-3	CASSETTE LID (DECK B)
25	SGE1898-3	CASSETTE HOLDER
25A	QBP2006A	SPRING
26	SBC994-1	BUTTON, OPERATION , A
27	SBC997	BUTTON, COUNTER
28	SBC998	BUTTON, EJECT
29	SBD143	KNOB, SLIDE
30	SHR9847	LATCH
31	SMN2083	DAMPER BRACKET
32	SMN2058	ANGLE
33	SBC995	BUTTON, OPERATION , B
34	SBC996	BUTTON, OPERATION , C
35	SGL253	ORNAMENT
36	SGXM51	SUB PANEL
37	SGWSX950-KE	FRONT PANEL ASS'Y
(E, EH, EG, XA)		
(XB, XL)		
37	SGWSX950-KEK	FRONT PANEL ASS'Y
(EK)		
38	SGXSX980-KE	FRONT GRILL ASS'Y
38A	SGU581	FILTER
41	SMQSX840-KN	DAMPER GEAR ASS'Y
42	SUB271-1	EJECT ROD
43	SMQ40039	EJECT LEVER (L)
44	SMQ40040	EJECT LEVER (R)
45	SUS889	SPRING (CASSETTE HOLDER)
46	SUS872	BRACKET
47	LN051431UN	LED ASS'Y(DECK A)(D700--D704)
48	SJS804	SOCKET(8P)
49	SJT783	CONTACT
50	SJS5331	SOCKET(3P)
50	SJS5629	CONNECTOR(6P)
51	SJT3319	CONNECTOR(3P)
51	SJT3611	CONNECTOR(6P)
52	SJT30243-V	CONNECTOR(2P)
52	SJT30340LX-V	CONNECTOR(3P)
52	SJT30440LX-V	CONNECTOR(4P)
52	SJT30543-V	CONNECTOR(5P)
52	SJT30640LX-V	CONNECTOR(6P)
52	SJT30740LX-V	CONNECTOR(7P)
52	SJT30843-V	CONNECTOR(8P)
53	SMN2084	ANGEL
54	SMN2088	BRACKET
(EG)		
55	SHR9094	LATCH
56	LN043431UN	LED ASS'Y(DECK B)(D700--D703)
57	QTF1054	FUSE HOLDER
(EG)		
58	SMQ40038	EJECT LEVER
59	SUX65	AXIS
60	SJTD0313	CONNECTOR(3P)
60	SJTD0413	CONNECTOR(4P)
60	SJTD0513	CONNECTOR(5P)
61	SJS306	REMOTE CONTROL JACK
(E, EK, EH, XA)		
(XB, XL)		
62	SHE187-2	HOLDER
(EG)		
63	SMC1282	SHIELD COVER
(EG)		
64	SMNM17	ANGLE
SCREWS.WASHERS AND NUTS		
101	XTB3+8J	SCREW
102	XUC2FT	E-RING
103	XTN4+6F	SCREW
104	XTB3+10JFR	SCREW
105	XTB3+20J	SCREW
106	XTBS3+8JFZ1	SCREW
107	XWA3B	WASHER
108	SNE2129-1	SCREW
109	XTB3+10J	SCREW
110	XTS3+8J	SCREW
111	XTB3+20J	SCREW
(EG)		
112	XTB3+8JFZ	SCREW
113	SNE4021-1	NUT
114	XTBS3+8JFZ1	SCREW
(EG)		
115	XTN26+6F	SCREW
116	XTBS3+8JFZ1	SCREW
(E, EK, EH, XA)		
(XB, XL)		

■ CABINET PARTS LOCATION



| | | |

■ CABINET PARTS LOCATION

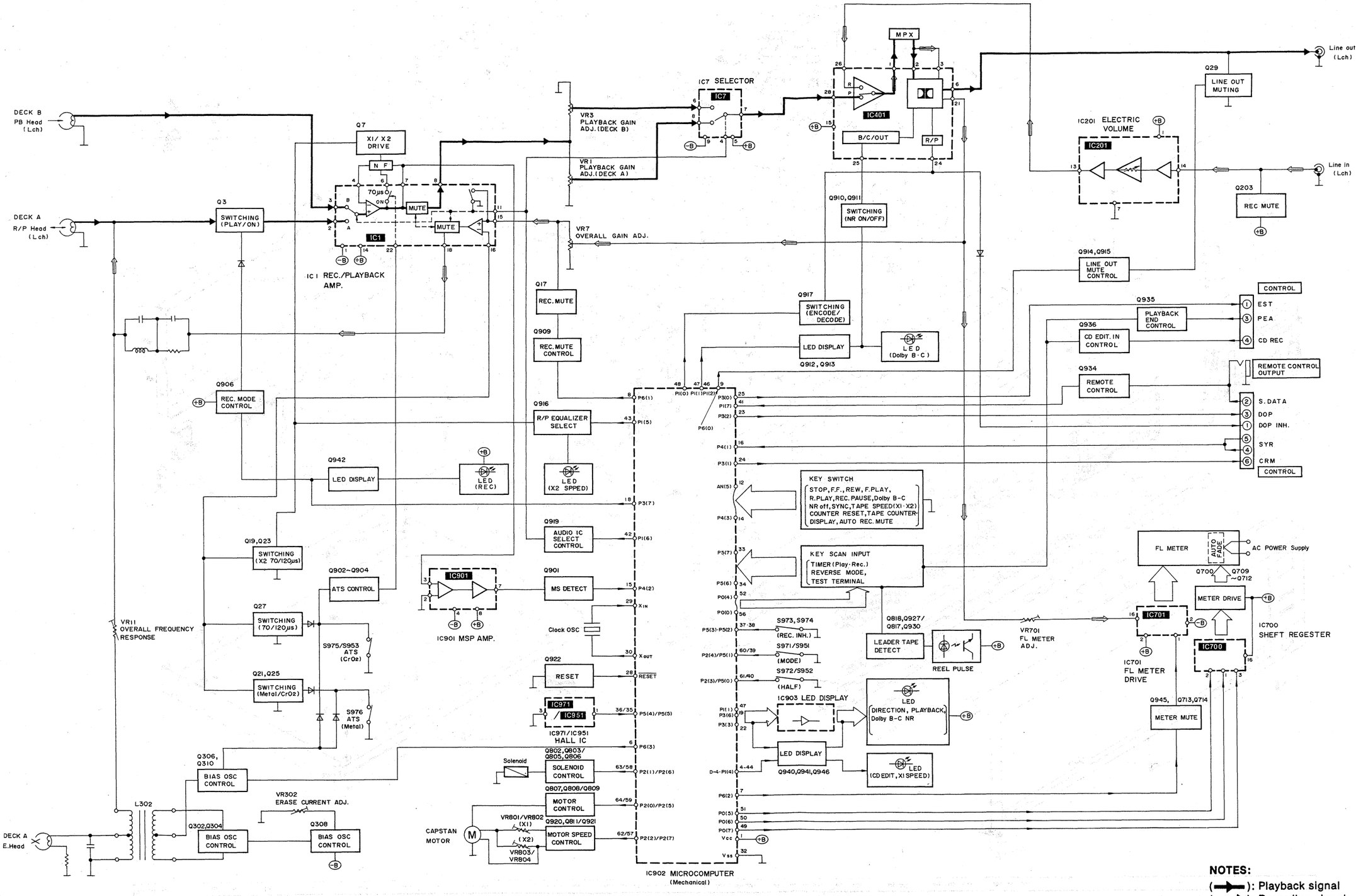


| | | |

RS-X950

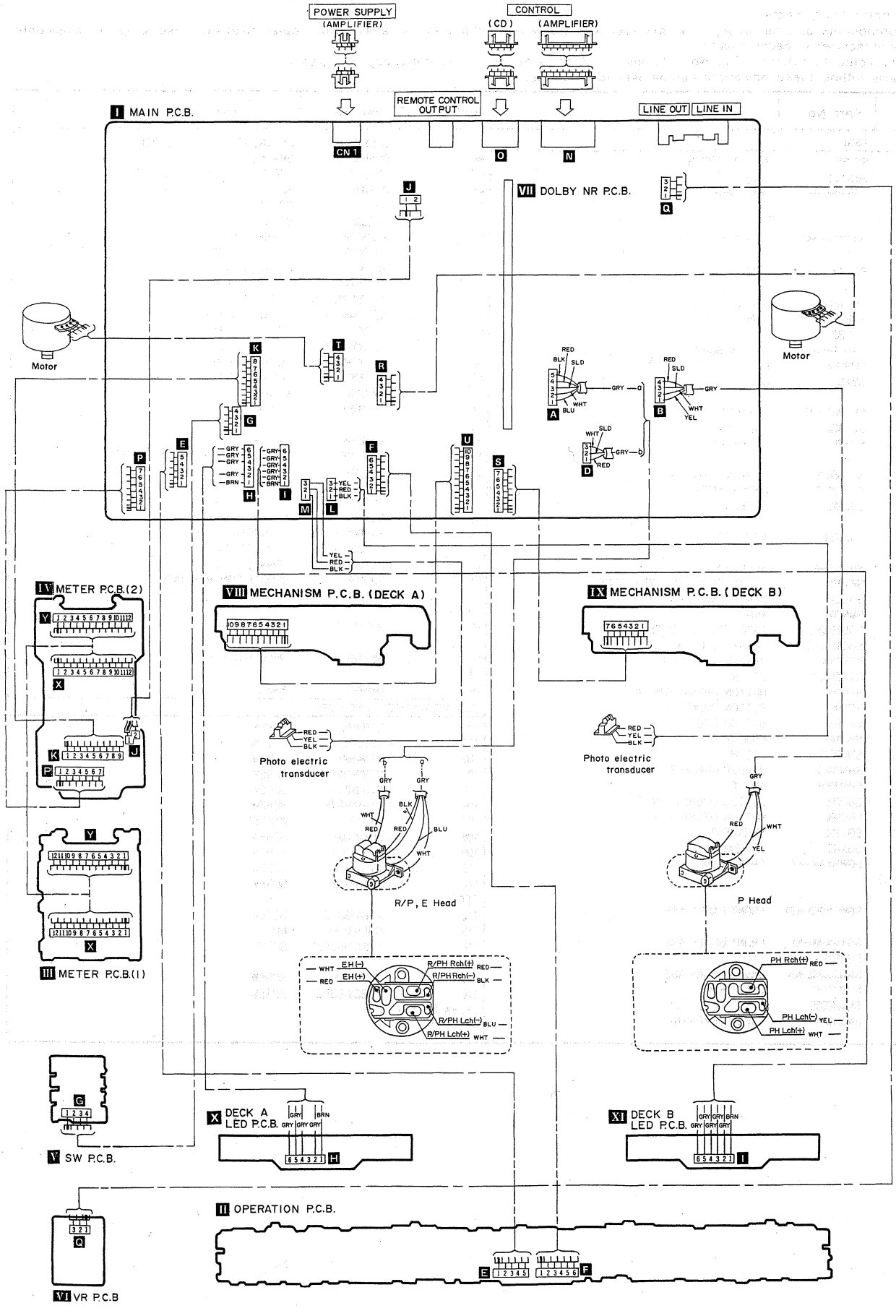
CABINET PARTS LOCATION

■ BLOCK DIAGRAM



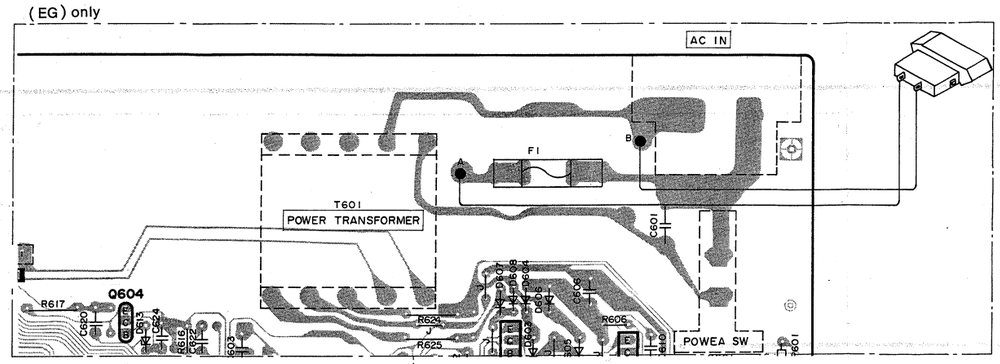
NOTES:
(➡): Playback signal
(⇒): Recording signal

WIRING CONNECTION DIAGRAM

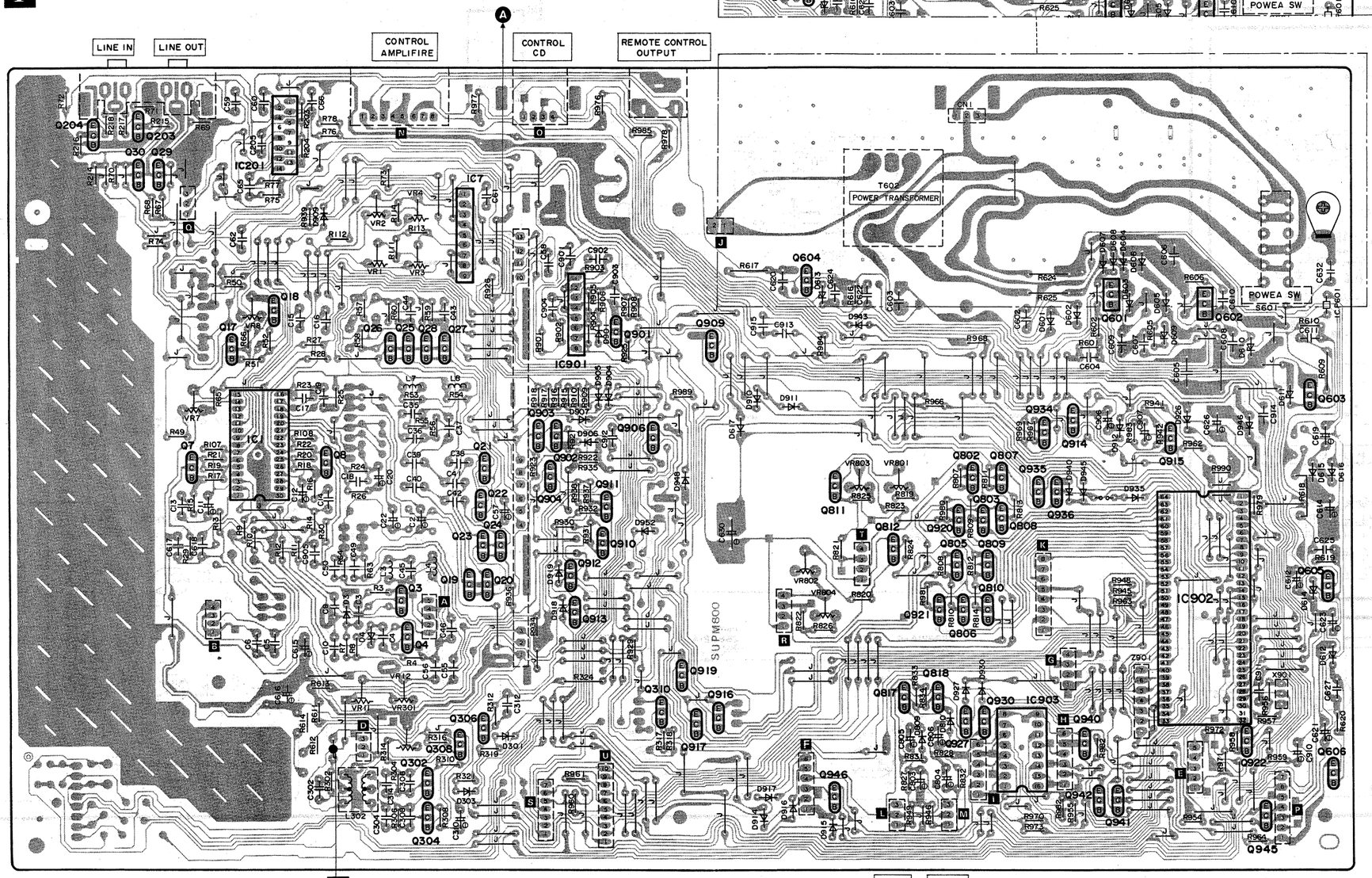


■ PRINTED CIRCUIT BOARDS

(EG) only

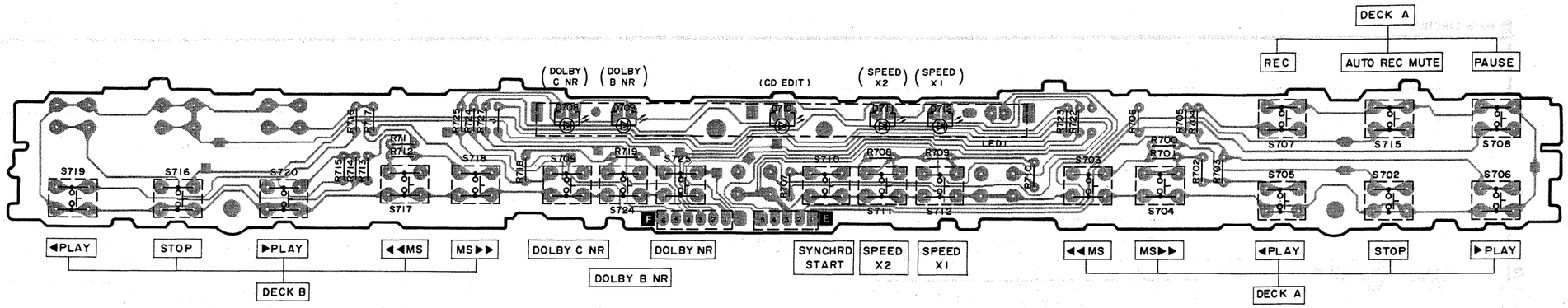


I MAIN P.C.B.

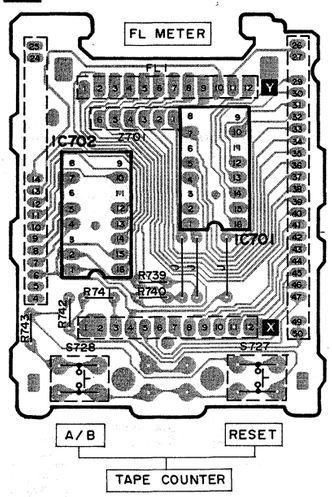


10 11 12 13 14 15 16 17 18 19

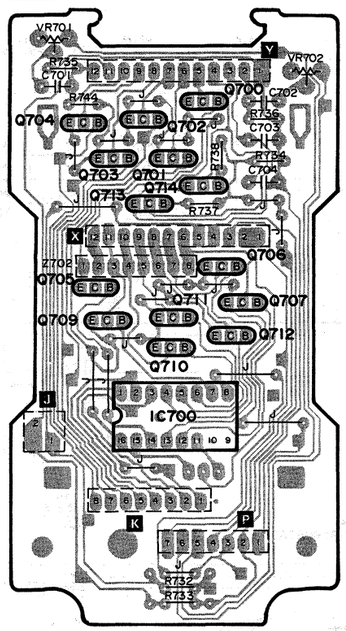
II OPERATION P.C.B.



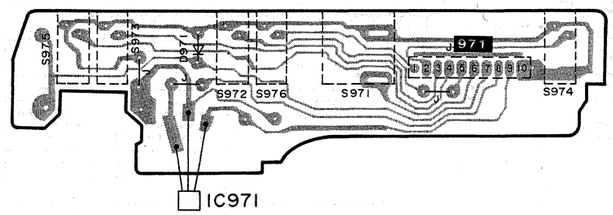
III METER P.C.B. (1)



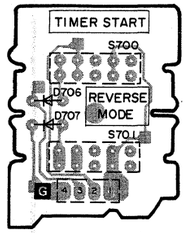
IV METER P.C.B. (2)



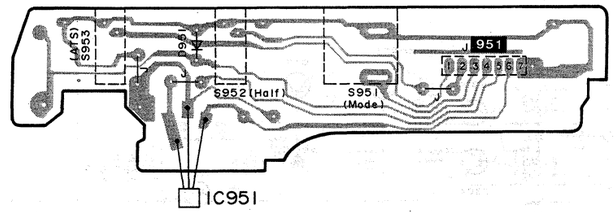
VIII MECHANISM P.C.B. (DECK A)



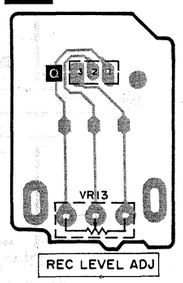
V SW P.C.B.



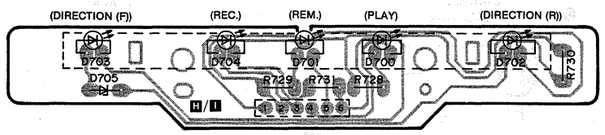
IX MECHANISM P.C.B. (DECK B)



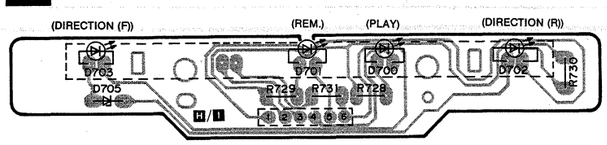
VI VR P.C.B.



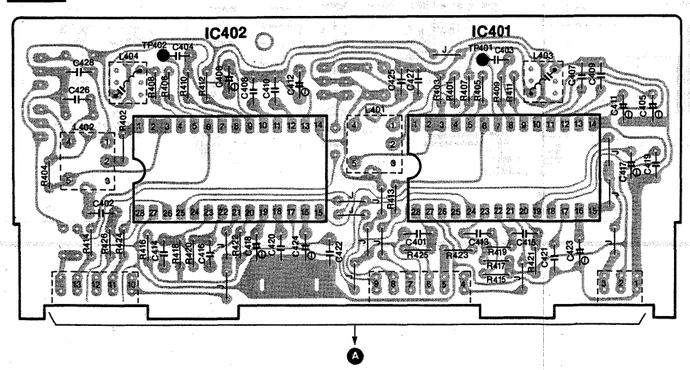
X DECK A LED P.C.B.

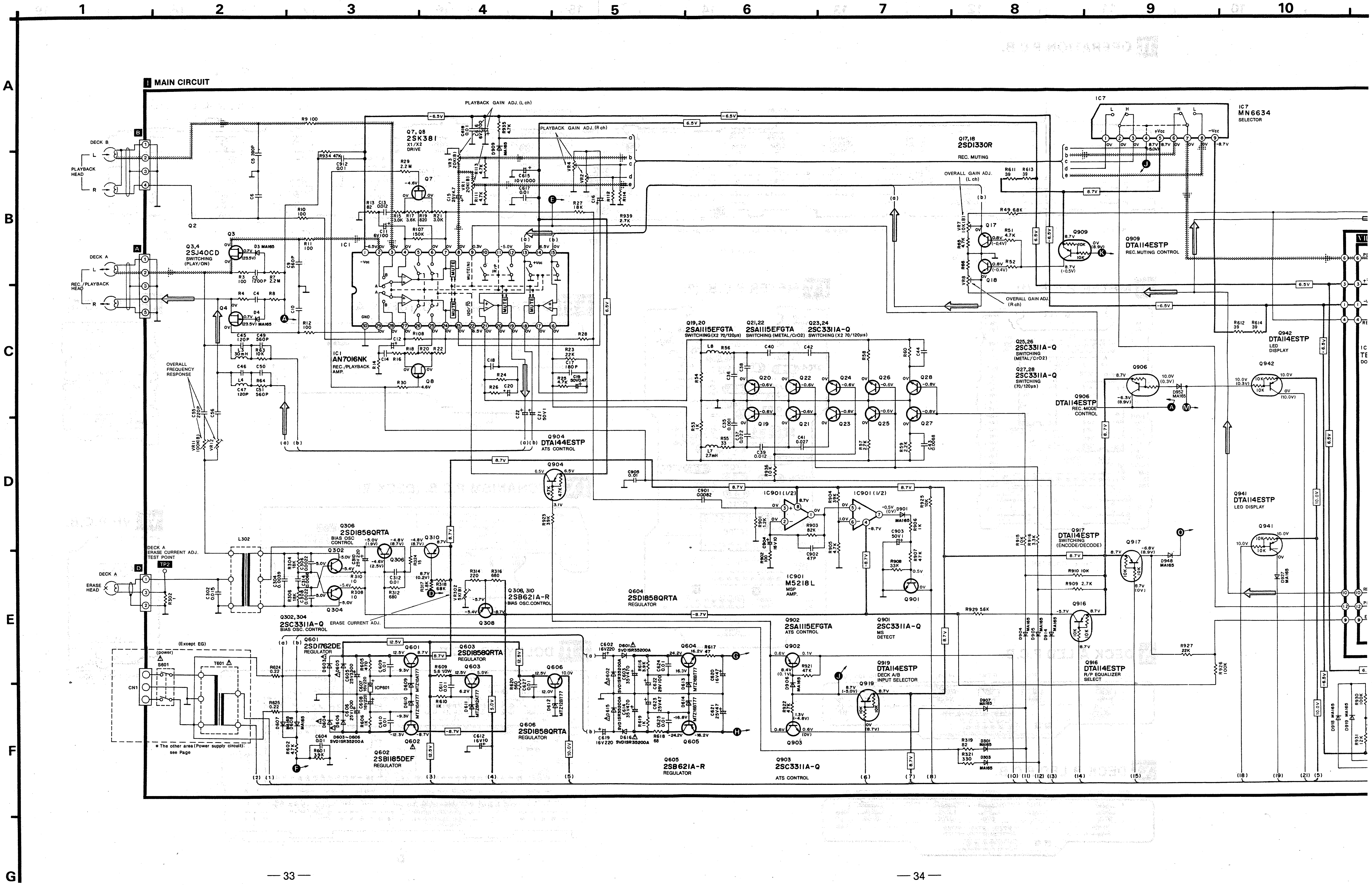


XI DECK B LED P.C.B.



VII DOLBY NR P.C.B.




MAIN CIRCUIT
DECK B
PLAYBACK HEAD
DECK A
REC./PLAYBACK HEAD
Q3,4 2SJ40CD SWITCHING (PLAY/ON)
Q7, Q8 2SK381 X1/X2 DRIVE
PLAYBACK GAIN ADJ. (L ch)
PLAYBACK GAIN ADJ. (R ch)
IC1 AN7016NK REC./PLAYBACK AMP.
OVERALL FREQUENCY RESPONSE
Q17,18 2SD1330R REC. MUTING
OVERALL GAIN ADJ. (L ch)
OVERALL GAIN ADJ. (R ch)
Q909 DTA114ESTP REC.MUTING CONTROL
IC7 MN6634 SELECTOR
Q19,20 2SA1115EFGTA SWITCHING (X2 70/120μs)
Q21,22 2SA1115EFGTA SWITCHING (METAL/CrO2)
Q23,24 2SC3311A-Q SWITCHING (X2 70/120μs)
Q25,26 2SC3311A-Q SWITCHING (METAL/CrO2)
Q27,28 2SC3311A-Q SWITCHING (70/120μs)
Q906 DTA114ESTP REC. MODE CONTROL
Q942 DTA114ESTP LED DISPLAY
Q904 DTA144ESTP ATS CONTROL
IC901 M5218L MSP AMP.
Q941 DTA114ESTP LED DISPLAY
Q917 DTA114ESTP SWITCHING (ENCODE/DECODE)
Q916 DTA114ESTP R/P EQUALIZER SELECT
DECK A ERASE CURRENT ADJ. TEST POINT
TP2
ERASE HEAD
Q306 2SD1858QRTA BIAS OSC CONTROL
Q302,304 2SC3311A-Q BIAS OSC. CONTROL
ERASE CURRENT ADJ.
Q308, 310 2SB621A-R BIAS OSC.CONTROL
Q604 2SD1858QRTA REGULATOR
Q902 2SA1115EFGTA ATS CONTROL
Q901 2SC3311A-Q MS DETECT
Q919 DTA114ESTP DECK A/B INPUT SELECTOR
(Except EG)
(power)
S601
T601
CN1
Q601 2SD1762DE REGULATOR
Q603 2SD1858QRTA REGULATOR
Q602 2SB1185DEF REGULATOR
Q606 2SD1858QRTA REGULATOR
Q605 2SB621A-R REGULATOR
Q903 2SC3311A-Q ATS CONTROL
D603~D606 SVD1SR35200A
* The other area (Power supply circuit): see Page

10 11 12 13 14 15 16 17 18 19

IC7
MN6634
SELECTOR

VIII DOLBY NR CIRCUIT

IC401,402
TEA0665
DOLBY B·C NR

IC401

IC402 (R ch)

Q941
DTA114ESTP
LED DISPLAY

Q942
DTA114ESTP
LED DISPLAY

Q910, 911
2SC3311A-Q
SWITCHING (NR ON/OFF)

Q912, 913
DTA144ESTP
LED DISPLAY

IC201
M51131LH
ELECTRIC VOLUME

Q203, 204
2SJ40CD
REC. MUTING

Q29, 30
2SD1330R
LINE OUT MUTING

VI VR CIRCUIT

Q808
DTC114ESTP
MOTOR CONTROL

Q807
2SB621A-R
MOTOR CONTROL

Q809
2SB621A-R
MOTOR CONTROL

Q810
DTC114ESTP
MOTOR CONTROL

Q802
2SB621A-R
SOLENOID CONTROL

Q803
DTC114ESTP
SOLENOID CONTROL

Q805
2SB621A-R
DECK B PLUNGER CONTROL

Q806
DTC114ESTP
DECK B PLUNGER CONTROL

Q915
DTC114ESTP
LINE MUTING CONTROL

Q914
2SA1115EFGTA
LINE MUTING CONTROL

Q920, 921
DTC114ESTP
MOTOR SPEED CONTROL

Q922
2SC3311A-Q
RESET

Q811, 812
2SK381
MOTOR SPEED CONTROL

Q818
DTC143TSTP
LEADER TAPE DETECTION

Q927
DTC144A
LEADER TAPE DETECTION

Q817
DTC143TSTP
DECK B LEADER TAPE DETECTION

Q930
DTC144A
LEADER TAPE DETECTION

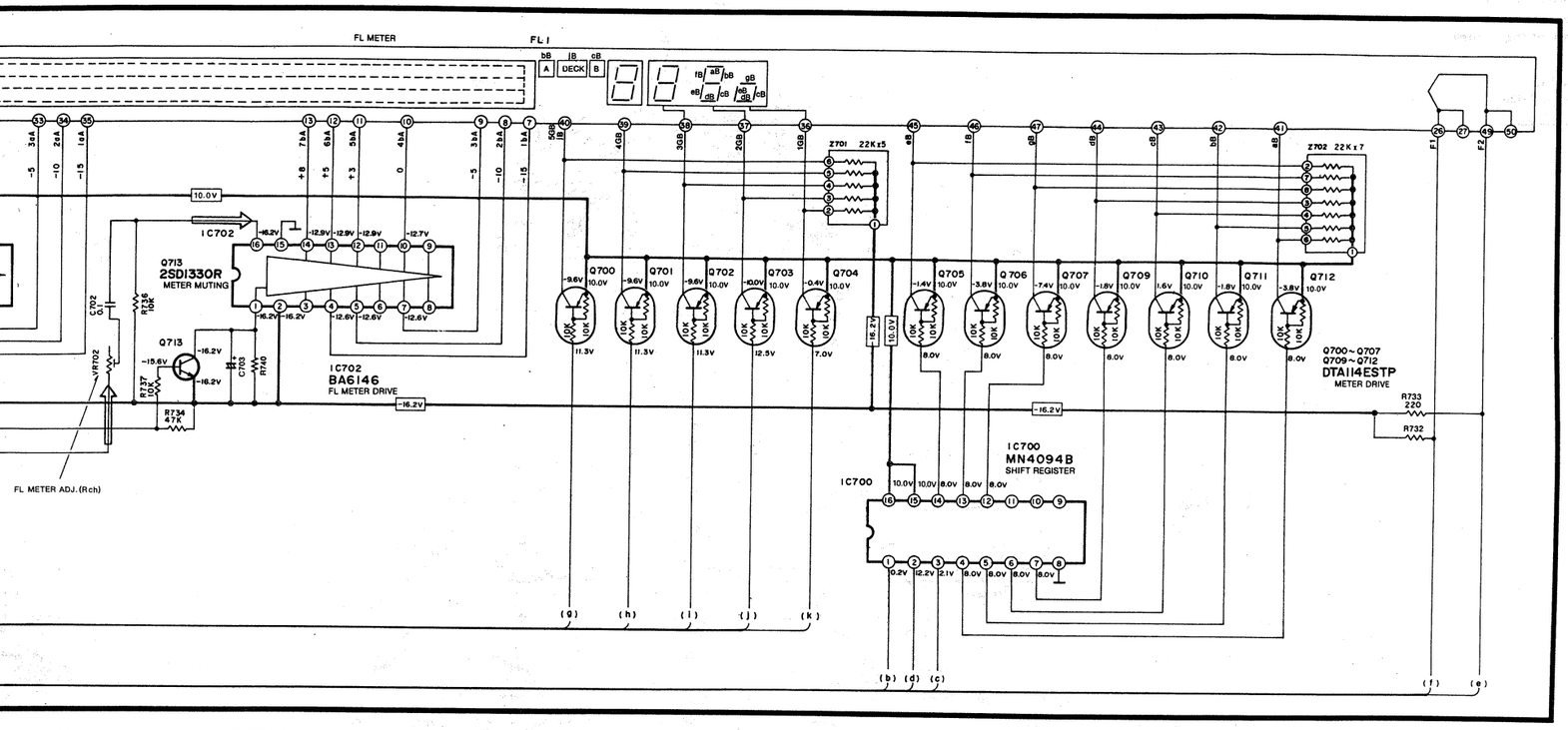
III / IV METER CIRCUIT (1) (2)

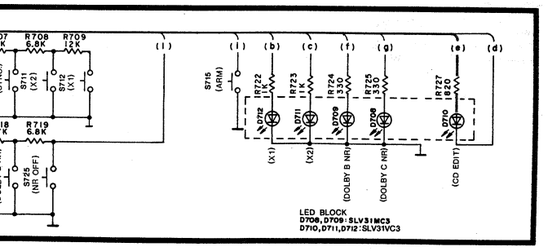
II OPERATION CIRCUIT

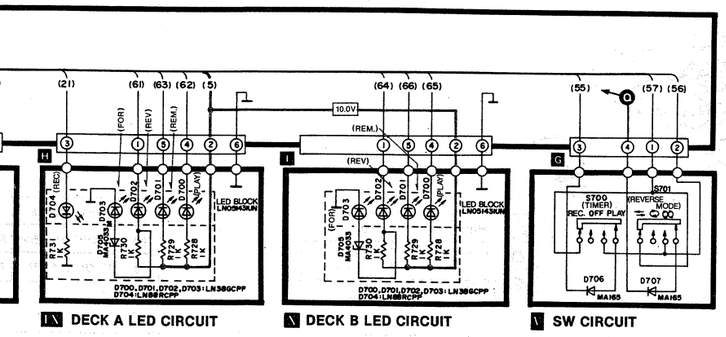
XI / XII / XIII MECHANISM CIRCUIT (DECK A)

XI / XII / XIII MECHANISM CIRCUIT (DECK B)

IX DECK A LED CIRCUIT



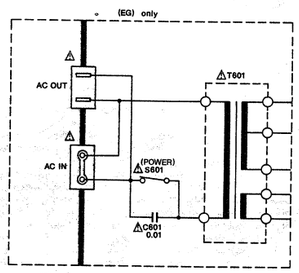




H DECK A LED CIRCUIT

I DECK B LED CIRCUIT

G SW CIRCUIT



■ SCHEMATIC DIAGRAM

(This schematic diagram may be modified at any time with the development of new technology.)

Notes:

- **S601 :** Power switch in **"on"** position.
- **S700 :** Timer stand-by switch in **"off"** position.
- **S701 :** Reverse mode selector in **"off"** position.
- **S702 :** Deck A Stop switch in **"off"** position.
- **S703 :** Deck A F.F./Rew switch in **"off"** position.
- **S704 :** Deck A Rew./F.F. switch in **"off"** position.
- **S705 :** Deck A Forward-side Playback switch in **"off"** position.
- **S706 :** Deck A Reverse-side Playback switch in **"off"** position.
- **S707 :** Deck A Rec. switch in **"off"** position.
- **S708 :** Deck A Pause switch in **"off"** position.
- **S709 :** Dolby C NR switch in **"off"** position.
- **S710 :** Synchro-start switch in **"off"** position.
- **S711 :** Editing tape speed selector (X2) in **"off"** position.
- **S712 :** Editing tape speed selector (X1) in **"off"** position.
- **S715 :** Deck A Auto rec. mute switch in **"off"** position.
- **S716 :** Deck B Stop switch in **"off"** position.
- **S717 :** Deck B F.F./Rew. switch in **"off"** position.
- **S718 :** Deck B Rew./F.F. switch in **"off"** position.
- **S719 :** Deck B Forward-side Playback switch in **"off"** position.
- **S720 :** Deck B Reverse-side Playback switch in **"off"** position.
- **S724 :** Dolby B NR switch in **"off"** position.
- **S725 :** Dolby NR OFF switch in **"off"** position.
- **S727 :** Tape counter reset switch in **"off"** position.
- **S728 :** Deck A/B tape counter display selector in **"off"** position.
- **S951 :** Deck B Mechanism leaf switch (Mode) in **"off"** position.
- **S952 :** Deck B Mechanism leaf switch (Half) in **"off"** position.
- **S953 :** Deck B Mechanism leaf switch (ATS) in **"off"** position.
- **S971 :** Deck A Mechanism leaf switch (Mode) in **"off"** position.
- **S972 :** Deck A Mechanism leaf switch (Half) in **"off"** position.
- **S973 :** Deck A Mechanism leaf switch (R. Rec. inh.) in **"off"** position.
- **S974 :** Deck A Mechanism leaf switch (F. Rec. inh.) in **"off"** position.
- **S975 :** Deck A Mechanism leaf switch (ATS) in **"off"** position.
- **S976 :** Deck A Mechanism leaf switch (ATS) in **"off"** position.

- Resistance are in ohms (Ω), 1/4 watt unless specified otherwise.
  1K=1,000 (Ω), 1M=1,000k (Ω)
- Capacity are in micro-farads (μF) unless specified otherwise.
- All voltage values shown in circuitry are under no signal condition and playback mode with volume control at minimum position otherwise specified.
  ( ) ..... Voltage values at record mode.
  For measurement us EVM.

- Important safety notice
  Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

- (± B) indicates ±B (bias).
- ( ) indicates the flow of the playback signal.
- ( ) indicates the flow of the record signal.

* Caution !

IC and LSI are sensitive to static electricity.
Secondary trouble can be prevented by taking care during repair.

* Cover the parts boxes made of plastics with aluminum foil.
* Ground the soldering iron.
* Put a conductive mat on the work table.
* Do not touch the legs of IC or LSI with the fingers directly.

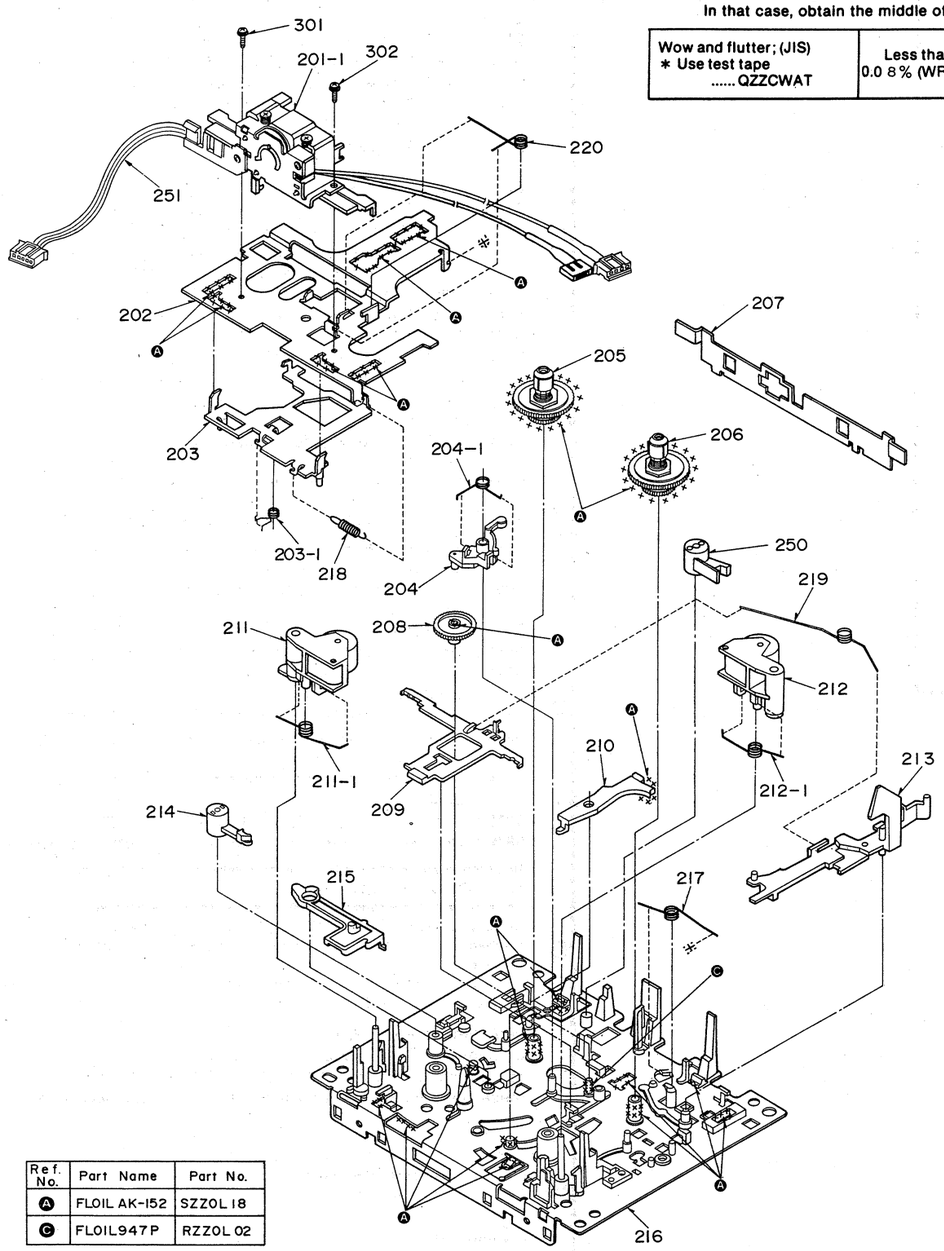
■ MECHANICAL PARTS LOCATION

(DECK A: Up side)

SPECIFICATIONS

NOTE: The value indicated by the torque tape may fluctuate during torque measurement. In that case, obtain the middle of the values.

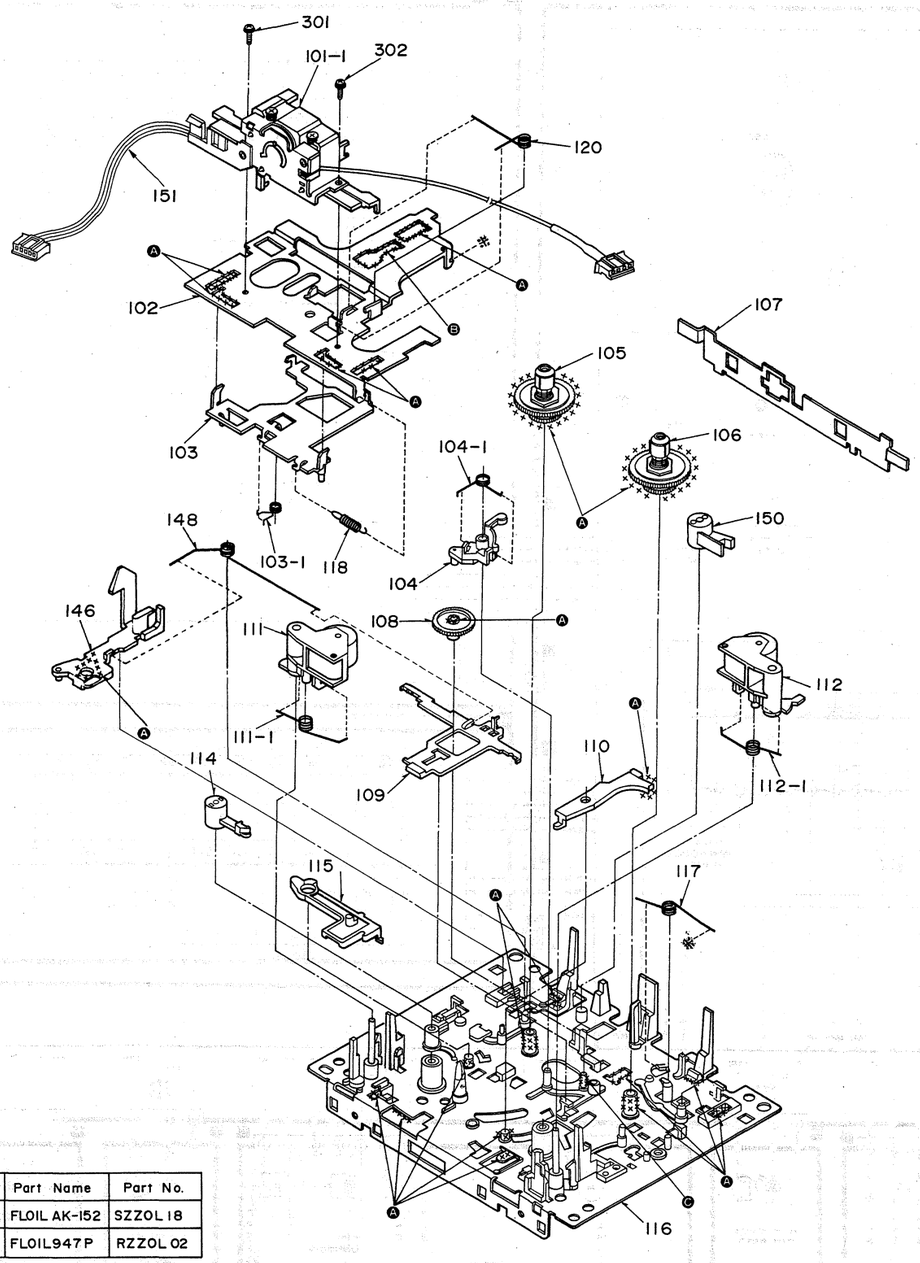
Wow and flutter; (JIS) * Use test tape ..... QZZCWAT	Less than 0.0 8 % (WRMS)



Ref. No.	Part Name	Part No.
A	FL01L AK-152	SZZ0L 18
C	FL01L947P	RZZ0L 02

| | | |

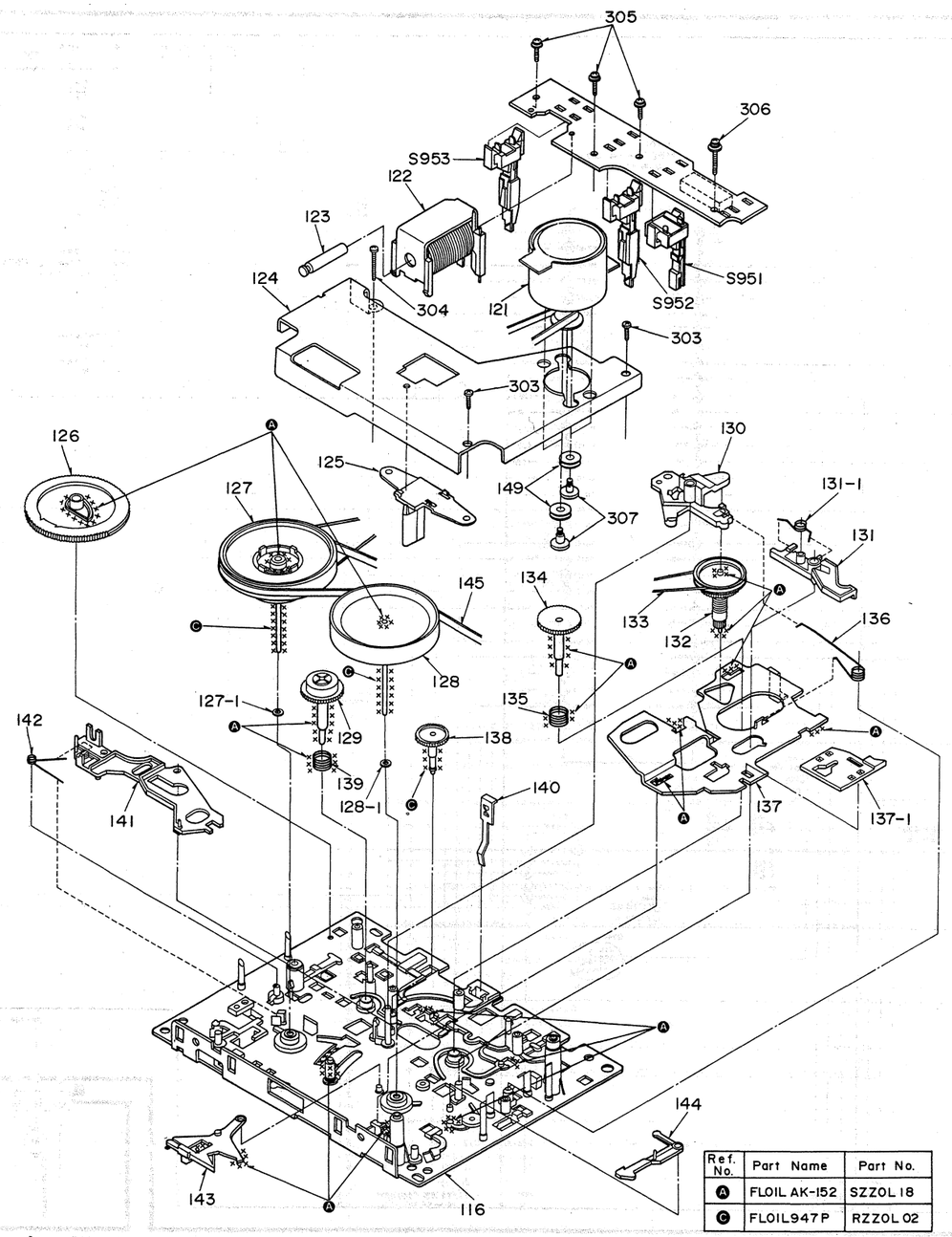
(DECK B: UP side)



Ref. No.	Part Name	Part No.
A	FL01IL AK-152	SZZ0L18
C	FL01IL947P	RZZ0L02

100~109			102		103		111-1	111	103-1	101-1	109	108	104	104-1		105				106	107				
110~119						114				115	118						110		116	117		112-1	112		
120~	146			151	148			301			302							120						150		

(DECK B: Down side)



Ref. No.	Part Name	Part No.
A	FL01IL AK-152	SZZ0L18
C	FL01IL947P	RZZ0L02

100~129		126				127-1	127	124	123	125	129	128-1	122	116	121										
130~139										139					138	135	134		133	132	130	137	131-1	131	136	137-1
140~	142		141		143							304	145	149	303	140	305	307	303	144	306				

■ REPLACEMENT PARTS LIST

Ref. No.	Part No.	Description
DECK A		
CASSETTE DECK		
201-1	1MD0060ZA	HEAD ASS, Y
202	RUA793Z	PLATE
203	RZLAR300	ROD
203-1	RUW143Z	SPRING
204	1UB0089ZA	LEVER
204-1	RUW148ZA	COIL SPRING
205	1DM0018ZA	REEL ASS, Y
206	1DM0017ZA	REEL TABLE ASS'Y
207	RUB502Z	LEVER
208	RDG5772Z	GEAR
209	RUB508ZA	LEVER
210	RUB506Z	LEVER
211	1UB0088ZA	REEL ASS, Y
211-1	RUW141Z	SPRING
212	1UB0087ZA	ARM
212-1	RUW140Z	SPRING
213	RUB507Z	LEVER
214	RNL1Z	DAMPER ARM
215	RUB503Z	LEVER
216	RZUSX980	CHASSIS
217	RUW142ZA	COIL SPRING
218	RUD105Z	SPRING
219	RUW144ZA	COIL SPRING
220	RUW139ZA	SPRING
221	RFM133ZA	DC MOTOR
222	1UE0015ZA	PLUNGER
223	RUB428Z	LEVER
224	RUL1030Z	ANGLE
225	RMD5014Z	BRACKET
226	RDG5927ZA	GEAR
227	1DW0053ZA	WHEEL
227-1	RNW139ZA	WASHER
228	1DW0054ZA	WHEEL
228-1	RNW138Z	WASHER
229	1DG0006ZA	GEAR ASS'Y
230	RUB513Z	LEVER
231	1UB0091ZA	LEVER
231-1	RUW146ZA	COIL SPRING
232	1DR0011ZA	PULLEY ASS'Y
233	RDV90Z	ANGULAR BELT
234	RDG5769Z	GEAR
235	RUQ10Z	SPRING
236	RUW145ZA	COIL SPRING
237	1UB0090ZA	ROD
237-1	RUB512Z	LEVER
238	RDG5773Z	GEAR
239	RUQ30Z	SPRING
240	RUS609Z	SPRING
241	RUB514Z	LEVER
242	RUW147ZA	COIL SPRING
243	RUB515Z	LEVER
244	RUB509ZA	LEVER
245	RDV108ZA	BELT
249	RHG3032Z	RUBBER CUSHION
250	RNL180Z	ARM
251	1JS0087ZA	REED WIRE
301	XTW2+6L	SCREW
302	XTW2+8L	SCREW
303	XTN26+7J	SCREW
304	XTN26+16F	SCREW
305	XTW2+8S	SCREW
306	XYC2+JF16	SCREW
307	QHQ1303	SCREW
308	XTN2+8F	SCREW
309	XTN16+8S	SCREW
S971	RSH1A89Z	SW
S972	RSH1A90Z	SW
S973	RSH1A90Z	SW
S975	RSH1A90Z	SW
S976	RSH1A90Z	SW
DECK B		
CASSETTE DECK		
101-1	1MD0059ZA	HEAD ASS, Y
102	RUA793Z	PLATE
103	RZLAR300	ROD
103-1	RUW143Z	SPRING
104	1UB0089ZA	LEVER
104-1	RUW148ZA	COIL SPRING
105	1DM0018ZA	REEL ASS, Y
106	1DM0017ZA	REEL TABLE ASS'Y
107	RUB502Z	LEVER
108	RDG5772Z	GEAR
109	RUB508ZA	LEVER
110	RUB506Z	LEVER
111	1UB0088ZA	REEL ASS, Y
111-1	RUW141Z	SPRING
112	1UB0087ZA	ARM
112-1	RUW140Z	SPRING
114	RNL1Z	DAMPER ARM
115	RUB503Z	LEVER
116	RZUSX980	CHASSIS
117	RUW142ZA	COIL SPRING
118	RUD105Z	SPRING
120	RUW139ZA	SPRING
121	RFM133ZA	DC MOTOR
122	1UE0015ZA	PLUNGER
123	RUB428Z	LEVER
124	RUL1030Z	ANGLE
125	RMD5014Z	BRACKET
126	RDG5927ZA	GEAR
127	1DW0037ZA	FLYWHEEL ASS'Y
128	1DW0054ZA	WHEEL
128-1	RNW138Z	WASHER
129	1DG0006ZA	GEAR ASS'Y
130	RUB513Z	LEVER
131	1UB0091ZA	LEVER
131-1	RUW146ZA	COIL SPRING
132	1DR0011ZA	PULLEY ASS'Y
133	RDV90Z	ANGULAR BELT
134	RDG5769Z	GEAR
135	RUQ10Z	SPRING
136	RUW145ZA	COIL SPRING
137	1UB0090ZA	ROD
137-1	RUB512Z	LEVER
138	RDG5773Z	GEAR
139	RUQ30Z	SPRING
140	RUS609Z	SPRING
141	RUB514Z	LEVER
142	RUW147ZA	COIL SPRING
143	RUB515Z	LEVER
144	RUB509ZA	LEVER
145	RDV108ZA	BELT
146	RUB541Z	LEVER
148	RUW167Z	SPRING
149	RHG3032Z	RUBBER CUSHION
150	RNL180Z	ARM
151	1JS0088ZA	WIRE
S951	RSH1A89ZA	SW
S952	RSH1A90Z	SW
S953	RSH1A90Z	SW
SCREWS, WASHERS AND NUTS		
127-1	RNW139ZA	WASHER
161	XTW2+6L	SCREW
162	XTW2+8L	SCREW
163	XTN26+7J	SCREW
164	XTN26+16F	SCREW
165	XTW2+8S	SCREW
166	XYC2+JF16	SCREW
167	QHQ1303	SCREW
168	XTN2+8F	SCREW
169	XTN16+8S	SCREW

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ORDER NO. HAD88048804125C8-A

Cassette Deck

RS-X950

DEUTSCH

MESSUNGEN UND EINSTELL METHODEN

Meßinstrumente

- Elektronisches Voltmeter (EVM)
- Oszilloskop
- Digitaler Frequenzmesser
- Audiofrequenz-Oszillator
- Dämpfungswiderstand
- Gleichstrom-Voltmeter
- Widerstand (600Ω)

Tonkopf-Azimuteinstellung

1. Spielen Sie auf dem Testband (QZZCFM) den Teil für die Azimuteinstellung (8kHz, −20dB) ab. Drehen Sie die Azimuteinstellschraube so lange, bis die Abgaben des L-K und R-K den Höchstwert erreichen, und die Lissajosscghe wellenfigur sich, wie abgebildet, 0 Grad nähert.

Anmerkung:

When L-K und R-K nicht auf demselben Punkt ihren Höchstwert erreichen, stellen Sie beide Kanäle auf den jeweiligen Höchstwert und gleichen dann aus.

2. Nehmen Sie denselben Einstellvorgang in der Wiedergabestellung vor.

Prüfung des Pegelunterschiedes bei Vorwärts- und Rückwärtsdrehung

3. Den Abschnitt für Verstärkungseinstellung (315Hz, 0dB) des Prüfbandes (QZZCFM) wiedergeben und sicherstellen, daß der Pegelunterschied bei Vorwärts- und Rückwärtsdrehung kleiner als 1dB ist.
4. Nach der Einstellung Schrauben-Sicherungsmittel an die Azimuth-Einstellschraube geben.

Bandgeschwindigkeits-einstellung

Hohe Geschwindigkeit

1. Den Wahlschalter für Editier-Bandgeschwindigkeit auf **"X2"** stellen.
2. Den mittleren Teil des Prüfbandes (QZZCWAT) wiedergeben.
3. Deck B=**VR804** und Deck A=**VR802** so einstellen, daß der Ausgang dem Sollwert entspricht.

Normale Geschwindigkeit

4. Den Wahlschalter für Editier-Bandgeschwindigkeit auf **"X1"** stellen.
5. Den mittleren Teil des Prüfbandes (QZZCWAT) wiedergeben.
6. Deck B=**VR803** und Deck A=**VR801** so einstellen, daß der Ausgang dem Sollwert entspricht.

Einstellung der Wiedergabeverstärkungsregelung

1. Spielen Sie auf dem Testband (QZZCFM) den Teil für die Einstellung der Verstärkungsregelung (315Hz, 0dB) ab.
2. Stellen Sie **VR1** (L-K) [[**VR2** (R-K)]] für Deck B uon **VR3** (L-K) [[**VR4** (R-K)]] für Deck A so ein, daß die Abgabe den Normwert erfüllt.

Wiedergabefrequenzaang

1. Spielen Sie auf dem Testband (QZZCFM) den Teil für den Frequenzgang (315Hz, 12,5kHz~63Hz, −20dB) ab.
2. Achten Sie darauf, daß der Frequenzgang für beide Kanäle (L-K, R-K) in dem in **Abb. 6** gezeigten Bereich liegt.

Löschstromeinstellung (Deck A)

1. Die leere Metallband-Prüfkassette (QZZCRZ) einsetzen und das Gerät auf Aufnahmepause schalten.
2. **VR302** so einstellen, daß der Ausgang zwischen **TP2** und GND dem Sollwert entspricht.

Gesamtfrequenzgang (Deck A)

1. Legen Sie das normale Leertestband (QZZCRA) ein und stellen das Gerät auf Aufnahme-/Pause-Betrieb.
2. Geben Sie über einen Lautstärkeregler ein Bezugseingabesignal (1kHz, −24dB) ein.
3. Stellen Sie das Signal auf 20dB und justieren die Frequenz von 50Hz~10kHz.
4. Nehmen Sie das Wobbelsignal auf.
5. Geben Sie das aufgenommene Signal wieder und achten darauf, daß dieses sich im Vergleich zur Bazugsfrequenz (1kHz) in dem in **Abb. 9** aufgezeichneten Bereich befindet.
6. Sollte das Signal nicht im Normbereich liegen, justieren Sie **VR11** (L-K) und **VR12** (R-K) so, daß der Frequenzpegel mit der Norm übereinstimmt.
7. Wiederholen Sie die Schritte 2~6 und verwender das CrO_2 Band (QZZCRX) und das Metallband (QZZCRZ). Der Frequenzbereich wird auf 12.5kHz (50Hz~12.5kHz) angehoben.
8. Achten Sie darauf, daß sich der Frequenzpegel in dem in **Abb. 10** aufgezeigten Bereich befindet.

Einstellung der Gesamtverstärkungsregelung (Deck A)

1. Legen Sie das normale Leertestband (QZZCRA) ein und stellen das Gerät auf Aufnahme-/Betrieb.
2. Legen Sie ein Bezugseingabesignal (1kHz, −24dB) an. Stellen Sie das Ausgangssignal auf einen Pegel von 0.4V ein.
3. Nehmen Sie das Eingabesignal auf.
4. Geben Sie das in Schritt 3 oben aufgenommene Signal wieder und achten Sie darauf, daß das Ausgangssignal mit dem Normwert übereinstimmt.
5. Sollte der Wert nicht innerhalb der Norm liegen, justieren Sie **VR7** (L-K) und **VR8** (R-K).
6. Wiederholen Sie die Schritte 2~5 von oben so lange, bis das Ausgangssignal im Normbereich liegt.

Fluoreszenzanzeigeneinstellung

1. Legen Sie das normale Leertestband (QZZCRA) ein und geben bei Aufnahme-/Pause-Betrieb ein Bezugseingabesignal (1kHz, −24dB) ein.
2. Verwenden Sie einen Lautstärkeregler und stellen Sie diesen so ein, daß an den "LINE OUT"-Anschlüssen des Kassettendecks 0.4V anliegen.
3. Justieren Sie **VR701** (L-K) und **VR702** (R-K) so, daß der "-0dB" -Abschnitt der Anzeige schwach auflenuchtet.

FRANÇAIS

METHODES DES MEASURES ET REGLAGES

Appareils de mesurage

- Voltmètre électronique
- Oscilloscope
- Compteur de fréquence numérique
- Oscillateur de fréquence audio
- A.T.T. (Atténuateur)
- Voltmètre à C.C.
- Résistance (600Ω)

Reglage Azimutal de la tete

1. Faire jouer la portion du réglage de l'azimuth (8kHz, −20dB) de la bande d'essai (QZZCFM). Ajuster la vis de la mise au point azimutale jusqu'à ce que les sorties du canal de gauche et du canal de droite soient maximisées et que la forme d'onde de Lissajous, comme il est illustré, approche de 0 degré.

Nota:

Si le canal de gauche et canal de droite ne sont pas maximisés au même point, régler le point où les niveaux de chaque canal sont maximiséset égaux.

2. Effectuer le même r&e 19 mglage sur le mode d'audition.

Vérification de la différence de niveau pour les deux sens de rotation

3. Introduire une bande métal vierge prévue pour les essais (QZZCPZ) et vérifier que la différence de niveau pour lés déux sens de rotation est inférieure à 1dB.
4. Après cela, mettre une goutte de vernis de blocage sur la vis de réglage de l'azimut.

Réglage de la vitesse de défilement Vitesse

Grande vitesse

1. Placer le sélecteur de vitesse d'édition sur la position "**X2**".
2. Lire la partie centrale de la band d'essai (QZZCWAT).
3. Régler **VR804** pour la platine B et **VR802** pour la platine A de manière que la sortie ait la valeur standard.

normal

4. Placer le sélecteur de vitesse d'édition sur la position "**X1**".
5. Lire la partie centrale de la band d'essai (QZZCWAT).
6. Régler **VR803** pour la platine B et **VR801** pour la platine A de manière que la sortie ait la valeur standard.

Reglage de L'amplification de Lecture

1. Faire jouer la partie réglée de l'amplification (315Hz, 0dB) de la bande d'essai (QZZCFM).
2. Régler la platine B: **VR1** (canal de gauche) [[**VR2** (canal de droite)]] et la platine A: **VR3** (canal de gauche) [[**VR4** (canal de droite)]] de telle sorte que la sortie soit en deçà de la valeur standard.

Reponse en Frequence de la Lecture

1. Faier jouer la partie de la réponse en fréquence (315Hz, 12.5kHz, −63Hz, −20dB) de la bande d'essai (QZZCFM).
2. S'assurer que la réponse en fréquence soit en deçà de la plage montrée dans la **Fig. 6**, à la fois pour le canal de gauche et le canal de droite.

Réglage du courant d'effacement (Platine A)

1. Introduire une bande métal vierge prévue pour les essais (QZZCRZ) et régler l'appareil en mode de pause d'enregistrement.
2. Régler **VR302** de maniére que la sortie entre TP2 et GND ait la valeur standard.

Reponse en Frequence Totale (Platine A)

1. Introduire la bande d'essai vierge normale (QZZCRA) et régler l'appareil sur le mode d'intermission d'un disque.
2. Appliquer un signal d'entrée de référence (1kHz, −24dB) par l'intermédiaire d'un atténuateur.
3. Diminuer le signal de 20dB et régler la fréquence de 50Hz~10kHz.
4. Enregistrer le balayage de fréquence.
5. Faire jouer le signal enregistré et s'assurer qu'il soit en deçà de la plage montrée à la **Fig. 9** en comparaison à la fréquence de référence (1kHz).
6. S'Il n'est pas en deçá de la plage standard, régler **VR11** (canal de gquche) et **VR12** (canal de droite) de telle sorte que le niveau de fréquence soit en deçá de la plage standard.
7. Répéter les étapes 2~6 ci-dessus en utilisant la band CrO_2 (QZZCRX) et la bande métallisée (QZZCRX) en augmentant la plage de fréquence à 12.5kHz (50Hz~12.5kHz).
8. S'assurer que le niveau soit en deçà de la plage montrée à la **Fig. 10**.

Reglage de L'amplification Totale (Platine A)

1. Introduire la bande d'essai vierge normale (QZZCRA) et régler l'appareil sur le mode d'intermission d'un disque.
2. Appliquer un signal d'entrée de référence (1kHz, −24dB). Diminuer la sortie de telle sorte que son niveau devienne de 0.4V.
3. Enregistrer ce signal d'entrée.
4. Faire jouer le signal enregistré à l'étape 3 ci-dessus, et s'assurer que la sortie en deçà de la valeur standard.
5. Si elle n'est pas en deçà de la valeur standard, régler **VR7** (canal de gauche) et **VR8** (canal de droite).
6. Répéter les étapes 2~5 ci-dessus jusqu'à ce que la sortie soit en deçà de la valeur standard.

Reglage du Mesureur Fluorescent

1. Introduire la bande d'essai vierge normale (QZZCRA) et appliquer un signal d'entrée de référence (1kHz, −24dB) sur le mode d'intermission d'un disque.
2. En utilisant un atténuateur, le régler jusqu'à ce que la tension des bornes "LINE OUT" (sortie de ligne) des platines de magnétophones soit de 0.4V.
3. Ajuster **VR701** (canal de gauche) et **VR702** (canal de droite) de telle sorte que le segment "0dB" soit légèrement éclairé.

ESPAÑOL

METODOS DE AJUSTE Y MEDIDA

Instrumento de medición

- EVM (Voltimetro electrónico)
- Osciloscopio
- Frecuencimetro digital
- Oscilador AF
- ATT (Atenuador)
- Voltimetro CC
- Resistor (600Ω)

Ajuste Azimutal de Cabeza

1. Reproducir la porción de ajuste azimutal (8kHz, −20dB) de la cinta de prueba (QZZCFM). Variar el tornillo de ajuste azimutal hasta que las salidas del CH-I y CH-D se maximicen y forma de onda de lissajous, como ilustrado, se acerque a grado 0.

Nota:

Si CH-I y CH-D no son maximizados en el mismo punto, ajustar al punto donde los niveles de cada canal sean maximizados e igualados.

2. Efectuar el mismo ajuste en la modalidad de reproducción.

Comprobación de la diferencia de nivel de giro hacia adelante y hacia atrás

3. Reproduzca la parte del adjuste de ganancia (315Hz, 0dB) de la cinta de prueba (QZZCFM) y luego asegúrese de que la diferencia de nivel de giro hacia adelante y hacia atrás sea menor que 1dB.
4. Dcspués del ajustc, aplique pintura de fijación al tornillo de ajuste del azimut.

Ajuste de la Velocidad de la Cinta

Alta velocidad

1. Lleve a **"X2"** el selector de la velocidad de la cinta de edición.
2. Reproduzca la sección central de la cinta de prueba (QZZCWAT).
3. Ajuste la platina B=**VR804** y la platina A=**VR802** de modo que la salida quede comprendida dentro de los valores estándares.

Velocidad normal

4. Lleve a **"X1"** el selector de la velocidad de la cinta de edición.
5. Reproduzca la sección central de la cinta de prueba (QZZCWAT).
6. Ajuste la platina B=**VR803** y la platina A=**VR801** de modo que la salida quede comprendida dentro de los valores estándares.

Ajuste de Ganancia de Reproduccion

1. Reproducir la porción ajustada de ganancia (315Hz, 0dB) de la cinta de prueba (QZZCFM).
2. Ajustar la Platina B: **VR1** (CH-I) [[**VR2** (CH-D)]] y la Platina A: **VR3** (CH-I) [[**VR4** (CH-D)]] de manera que la salida esté dentro del valor estándar.

Respuesta de Frecuencia de Reproduccion

1. Reproducir la parte de respuesta de frecuencia de reproducción (315Hz, 12.5kHz~63Hz, −20dB) de la cinta de prueba (QZZCFM).
2. Asegurarse de que la respuesta de frecuencia esté dentro de la gama mostrada en la **Fig. 6** para ambos CH-I y CH-D.

Ajuste de la Corriente de Borrado (Platina A)

1. Inserte la cinta de prueba metálica en blanco (QZZCRZ) y ponga el aparato en la modalidad de pausa de grabación.
2. Regule **VR302** de modo que la salida entre **TP2** y GND esté dento de los valores estándares.

Respuesta de Frecuencia Total (Platina A)

1. Poner una cinta virgen normal (QZZCRA) y poner la unidad en la modalidad de Pausa de Grabación.
2. Aplicar la señal de entrada de referencia (1kHz, −24dB) a través de un atenuador.
3. Atenuar la señal por 20dB y ajustar la frecuencia de 50Hz~10kHz.
4. Grabar el barrido de frecuencia.
5. Reproducir la señal grabada y asegurarse de que esté dentro de la gama mostrada en la **Fig. 9** en comparación con la frecuencia de referencia (1kHz).
6. Si no está dentro de la gama de frecuencia, ajustar **VR11** (CH-I) y **VR12** (CH-D) de manera que el nivel de frecuencia esté dentro de la gama estándar.
7. Repetir los pasos 2~6 de arriba utilizando la cinta CrO_2 (QZZCRX) y la cinta metálica (QZZCRZ) incrementando la gama de frecuencia a 12.5kHz (50Hz~12.5kHz).
8. Asegurarse de que el nivel est&e 19mdentro de la gama mostrada en la **Fig. 10**.

Ajuste de Ganancia Total (Platina A)

1. Insertar la cinta de prueba en blance normal (QZZCRA) y poner la unidad en modalidad de pausa de Grabación.
2. Aplicar la señal de entrada de referencia (1kHz, −24dB). Atenuar la salida de manera que su nivel se haga 0.4V.
3. Grabar la señal de entrada.
4. Reproducir la señal grabada en el paso 3 de arriba y asegurarse de que la salide esté dentro del valor estándar.
5. Si no está dentro del valor estándar, ajustar **VR7** (CH-I) y VR8 (CH-D).
6. Repetir el paso 2~5 de arriba hasta que la salida esté dentro del valor estándar.

Ajuste de Medidor de Fluorescente

1. Insertar la cinta de prueba en blanco normal (QZZCRA) y aplicar una señal de entrada de referencia (1kHz, −24dB) en la modalidad de Pausa de Grabación.
2. Utilizando un atenuador, ajustarlo hasta que la tensión de los terminales "LINE OUT" (salida de linea) de las platinas de cinta sea 0.4V.
3. Ajustar **VR701** (CH-I) y **VR702** (CH-D) de manera que el segmento "0dB" esté ligeramente iluminado.

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